DOCUMENT RESUME

ED 460 681 IR 057 271

AUTHOR	Hert, Carol A.; Eschenfelder, Kristin R.; McClure, Charles R.; Rubin, Jeffrey; Taffet, Mary D.; Abend, Jennifer E.; Pimentel, David M.
TITLE	Evaluation of Selected Websites at the U.S. Department of Education: Increasing Access to Web-Based Resources.
INSTITUTION	Syracuse Univ., NY. School of Information Studies.
SPONS AGENCY	Department of Education, Washington, DC.
PUB DATE	1999-01-11
NOTE	333p.
PUB TYPE	Reports - Research (143)
EDRS PRICE	MF01/PC14 Plus Postage.
DESCRIPTORS	Administration; Evaluation Criteria; *Federal Government; Government Publications; Information Management; Information Policy; Information Sources; Tables (Data); User Needs (Information); *World Wide Web
IDENTIFIERS	*Department of Education; Electronic Resources; *Web Sites

ABSTRACT

The Department of Education's Web site (http://www.ed.gov) is a rich information and service resource that is widely used both within the Department of Education and by a variety of users external to the Department. It provides extensive information about the Department and its programs and services, enables users to interact efficiently with some programs, and serves diverse audiences. As the Web site has grown and developed, a number of issues have arisen that require attention. This document presents results of an evaluation of the site from four perspectives: management assessment, policy analysis, log and transaction analysis, and usability testing. The full report is presented in five major sections and capped by an Executive Summary. Following Section I: "Introduction" in which the study objectives and methods are outlined, each of the four assessment techniques and associated findings are represented as individual sections--Section II: "Management Assessment"; Section III: "Policy Assessment"; Section IV: "Technical Assessment"; and Section V: "User Assessment." Within each section, the methodology is detailed, findings presented, and recommendations suggested. Appendices include details of data collection instruments and other background information. (Author/AEF)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 460 681

EVALUATION OF SELECTED WEBSITES AT THE U.S. DEPARTMENT OF EDUCATION:

INCREASING ACCESS TO WEB-BASED RESOURCES

By

Carol A. Hert <cahert@mailbox.syr.edu>
Kristin R. Eschenfelder <kreschen@mailbox.syr.edu>
Charles R. McClure <cmcclure@mailbox.syr.edu>
Jeffrey Rubin
Mary D. Taffet
Jennifer E. Abend
David M. Pimentel

School of Information Studies
Syracuse University
Syracuse, NY 13244

For

U.S. Department of Education

January 11, 1999

IR057271

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

● Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C. McClure

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

EXECUTIVE SUMMARY

The Department of Education's website, www.ed.gov, is a rich information and service resource that is widely used both within the Department and by a variety of users external to the Department. It provides extensive information about the Department and its programs and services, enables users to interact efficiently with some programs (e.g., student financial aid), and serves diverse audiences. It has a rich web policy environment to facilitate Departmental decision-making in support of the development of the website. In relationship to other Federal websites, it is extremely well developed with a set of policies that go far beyond what other agencies typically have developed. But as the website has grown and developed, a number of issues – especially related to management and resource support – require attention.

In recent years, Congress and the Administration have instigated numerous programs and initiatives in electronic information dissemination and in programmatic areas for which the department has responsibilities for implementation and oversight. In this context of significant growth in departmental responsibilities, there have been major demands to both respond to these responsibilities and to provide information and program services via the department's website. The department's efforts to move to a web-based environment is laudable, but it simply cannot maintain this effort without a reassessment of resource support and management structure – especially given the increased program initiatives required by congress and the administration.

The Department contracted with the study team to evaluate the site during Fall 1998. The team, with extensive experience in evaluation of Federal websites, performed an evaluation that examined the site from four perspectives:

- **Management assessment**: This approach begins with a management perspective of how the agency is organized to manage Departmental websites in terms of developing content, adding and deleting pages, controlling quality, responding to customers, and evaluating the website (among other factors).

- **Policy analysis**: This approach stresses the degree to which the Department has developed internal policies to manage the website and the degree to which those policies are understandable and implemented. This approach also considers the degree to which existing agency policies do or do not recognize government-wide policies dealing with such topics as records management, privacy, Freedom of Information (FOI), security, Government Performance Results Act (GPRA), etc.

- **Log and transaction analysis**: This approach includes a range of assessment techniques that rely on data contained in the web server. Some of these include analyses of user paths, user search commands, and frequency of page access.

- **Usability testing**: This approach assesses the usability of the website from the perspective of users. Typically users examine the website in terms of content, ease of use, navigability, organization, availability and quality of help, etc.

The study team gathered data and identified key issues in the four areas. These are detailed in the full report and synthesized here. Additionally, the study team developed a set of recommendations for each area and a set of general recommendations that span the four areas. Some of these recommendations are in conflict with each other as can be expected given the range of stakeholders for the site. The Department will need to exercise judgement in determining how best to utilize the recommendations.

The team's evaluation provides a snapshot of www.ed.gov at this moment in time. As such it may under-represent the historical context which has led to the site's current status. It should also not be construed to represent the only large-scale evaluation that should occur for the site.

OVERVIEW OF THE REPORT

The full report is presented in five major sections and capped by the summary that is presented here. Following an introduction (Section I) in which the study objectives and methods are outlined, each of the four assessment techniques and associated findings are represented as individual sections (Management Assessment: section II; Policy Assessment: section III; Technical Assessment: section IV; and User Assessment: Section V.) Within each section, the methodology is detailed, findings presented, and recommendations suggested. In conjunction with the report, an extensive selection of appendices is provided which include details of data collection instruments and other background information. Finally, the study team provided the department with two supplemental loose-leaf notebooks of sets of policy instruments, one of all ED website policies, and the other of representative website policies from other federal agencies.

KEY FINDINGS

As stated earlier, the Department has quite successfully "grown" its website creating a rich information environment within a rich policy and management context. However, the Department and the website are following a not untypical trajectory for organizational websites, a trajectory that, if continued, will have a number of negative consequences for the website. This trajectory is one in which resources and management structures do not keep pace with the demands made on the website and the staff associated with it. Most critically, the ED website:

- Lacks adequate staffing and resource support for current operations and this condition is likely to worsen dramatically as demands for Internet support grow.

- Is outgrowing the capacity of the current website management structure.

These two issues represent "make-or-break" issues for the website. Without additional resources and a reconsideration of the current management structure, the problems currently experienced will continue and likely grow worse.

In addition to these two critical problems, the website:

- Needs to have expanded ongoing evaluation efforts associated with its use and growth.

- May be attracting users who are not well served by the website structure, organization, or associated finding tools and services.

- Is demonstrating some technical problems (such as non-standard coding, insufficient usage of META tags) which hinder user access.

- Can better incorporate and comply with selected broader Federal policies and regulations.

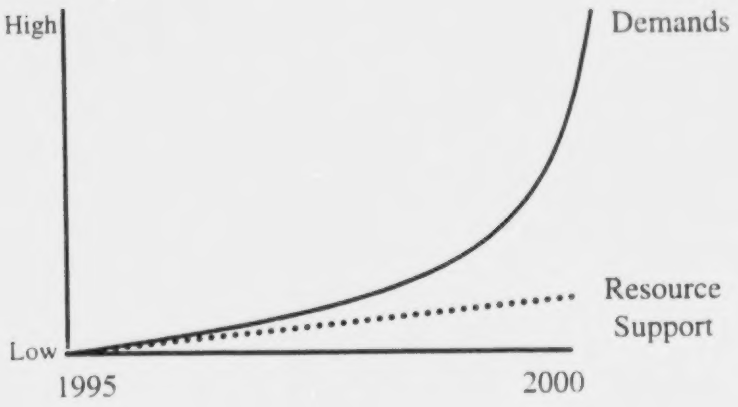
- Needs to move content beyond the current situation of reusing print content to a customer-centric site, which may present different information in ways that take advantage of the web's capabilities.

These conclusions result from the study team's four-pronged analysis approach.

MANAGEMENT AND EVALUATION EFFORTS

The most pressing concern for the Department regarding its website is the imminent outstripping of the capacity of the management structure and resources to meet the demands of the website. The team's evaluation provides a picture of a structure and resource base severely strained by the current demands of the website (see Figure ES -1). As the Department can expect these demands to continue growing, it is obvious that problems identified in this report will be exacerbated and likely other problems will emerge.

Figure ES-1 Web-Based Service Demands VS. Resource Support



The website and its management efforts are severely under-resourced. The study team believes that ED is facing a critical lack of staff in the area of website creation, maintenance, coordination across the various offices, and planning. There are insufficient staff in the Office of Educational Research and Improvement (OERI) and also in the Principal Operating Components (POC's) associated with website activities to attend to website development and management, and these staff need additional training. The current centralized structure has worked effectively for oversight purposes to date, but again, this structure is now creating bottlenecks in website content processing, evaluation, and ongoing planning. Strategic planning activities have fallen by the wayside as staff concentrate on the abundance of day-to-day tasks that must be accomplished to keep the website up and running.

Evaluation efforts have also necessarily remained minimal due to lack of resources. The contractor, while successful in maintaining content on the web, appears not to be fulfilling contractual obligations regarding submission of appropriate reports and data, and has not been evaluated using the performance measures in the contract. Feedback from customers (via the website and other customer service activities), which was extensively used in early planning and design (and the first redesign) stages has not been integrated in a routine way into ongoing site planning activities. The evaluation techniques used in this report can provide the department with strategies that should be incorporated into ongoing website evaluation efforts.

As web-based information services and resources grow throughout the Federal government, it is likely that more policy attention will be given to the role of Federal websites in meeting government-wide information and services dissemination guidelines. Although the Department of Education has clearly been working to integrate Federal policy into its web policies, it will need to continue to monitor policy developments in this area. Compliance with GPRA. EFOIA. records management guidelines. Y2K. and other policy initiatives will likely take on greater importance in the future and will require additional staff support. The Department will need to determine how best to assign responsibilities to insure agency compliance with these guidelines and requirements.

Given these concerns, the Department should:

- Clarify the primary purposes of the website and set priorities for what are the most important activities that should be supported via the website.
- Reassess how website activities are resourced and immediately begin processes to increase that allocation.
- Restructure and examine the responsibilities of key individuals related to the website and develop strategies for eliminating potential bottlenecks and pressure points (specific recommendations are presented in the management section).
- Implement a *program* of ongoing training for staff in basic website skills. (Training is required in the application contractor's contract.)
- Continue and expand log analyses. More sophisticated analysis software can be purchased. Procedures for addressing problems identified in log analysis should be implemented. Strategies to encourage webmasters to review and act upon log analysis reports should be developed.
- Develop mechanisms for routinely integrating feedback from customers.
- Establish responsibilities and procedures to monitor and comply with Federal policies that affect website development and use.
- Develop a policy of ongoing website evaluation.

The Department will continue to develop its web-based presence. It needs now to quickly address problems identified by this report and then to continue to assess how it is organized to support ongoing growth and development. In this process, the department should consider instituting more formal control and oversight over website development.

MOVING TOWARDS A USER-CENTERED SITE

The team's analysis of logs and user assessment point to a site which has highly-used areas, under-used areas, some technical problems which present possible difficulties for users, a number of difficulties related to searching and identifying specific information, and several design aspects that cater to the expert, knowledgeable user but may be less satisfactory to a novice user. This is a not untypical situation for an organizational site of this complexity and age. Most organizations first begin a website by recreating the organization's structure and by providing information in essentially the same format as text-based versions of that information.

To move the Department's website to the next level of evolution requires that the web be perceived as a unique type of information tool that does not need to mimic organizational structure or other information dissemination strategies. By virtue of its ubiquity and its enabling of enhanced access for a diverse set of users, a website needs to shift in focus away from an organization's perception of itself to the customers' perception of it. A user-centered approach to design is necessary.

A user-centered approach would mean that users are more proactively approached to determine their needs (both technical and in terms of information), their perceptions of website organization, terminology, ease of navigation, etc., and that site redesign would explicitly address those perceptions and needs. Additionally, knowledge about how users navigate websites, read online, etc. would be employed. For example, it may be useful to have different approaches to the website for those who are beginners versus those who are more sophisticated in their web skills and/or knowledge of the Department. It may also be important to consider "real time" user support and assistance. These general strategies change a site from one which "mimics" print publications to one that is a user-centered and user-responsive site (see Section III for details).

The Department has already taken a number of steps in this direction. The team's specific recommendations throughout the report and the general ones here should enable the Department to continue in this direction. To move towards a user-centered website, the Department could:

- Explicitly address and specify the purpose(s) and audiences for the website.
- Continue to tabulate the results of the online survey and incorporate mechanisms whereby the results are used by POCs and others to improve the website.
- Establish a team (or several teams) of interested users to provide regular feedback to the website management on the site.
- Undertake additional user studies of site terminology (for example, terms on the A-Z index could be assessed from a user perspective; one source of data are user terms put in on the search engines).
- Integrate website customer service activities with existing customer service activities.
- Continue log analyses practices and extend using software that produces data such as that in Section IV of this report.
- Develop policies/procedures for website content additions that incorporate user-centered research (e.g., on how people read online; typical user technical

configurations) and which lead to a consistent "look and feel" as well as consistent content and its organization on the website.

- Develop mechanisms beyond the IWG for the organization that would enable it to move beyond office-level website initiatives.

The study team recognizes that shifting a website to a user-centered approach requires efforts and resources that go beyond the website itself. This process will not be simple or immediate but will require a philosophical shift in the organization that recognizes the increasing dominance of electronic and web-based information services and resources as the medium of choice.

STRATEGIES FOR ONGOING EVALUATION

A purpose of this study was to suggest ways in which the Department can continue a process for regular ongoing assessment of its website. The study team recommends that future assessment efforts continue to incorporate a four-pronged approach that incorporates log and transaction analysis, user assessments, management assessment, and policy assessment. As shown in this report, the combination of these approaches offers a powerful means to provide a comprehensive view for where a Federal website can be improved.

In addition, the study team has provided the Department with detailed assessment techniques and data collection instruments. The appendices provide detailed descriptions of these methods and data collection instruments. Depending on the needs of the Department, the study team believes that many of these techniques and data collection instruments can be replicated or modified for future evaluation efforts. At issue is a commitment of time and resources to engage in such evaluation efforts. Nonetheless, the techniques offered in this report provide a basis for such efforts to be continued and refined.

INCREASING ACCESS TO WEB-BASED RESOURCES AND SERVICES

Clearly, the Federal government will continue to rely on the dissemination of government information and the provision of a range of services via a web and networked environment. Indeed, webmasters may not be able, at this time, to even foresee what those services might entail. The Department of Education has made significant strides in realizing the vision of Vice President Al Gore as quoted in the introduction to this report. That vision, however, requires that Federal agencies rethink how they "do business" and "provide services" in this evolving web environment. Part of this "rethinking" is allocating adequate resources and obtaining staff with the necessary skills to realize the vision.

An issue that all Federal agencies must address is the degree to which they can simultaneously continue traditional information services and resources and move to and expand their web and networked delivery of information and services. In fact, most agencies are now at the point where it is exceedingly difficult to do more with less. The current situation at the Department of Education suggests that for at least the web-based services and resources, the Department will need to commit additional resources to do more. Thus, setting priorities for what traditional services might be dropped or redesigned for a web environment will be a key management task in the future.

Improving the nation's access to and use of Department of Education information, resources, and services, *can* be done via the web environment – indeed, the findings presented in this report show that such is clearly the case. The Department, however, should expect continued significant growth in the nation's use of its web as more people become familiar with web services, more have computers and high-speed access from the home, and as more people *expect* to be able to conduct business via the web. With such rising levels of user demand and expectations, the Department should build on its existing strengths in web-based services and move quickly to respond to the concerns identified in this report.

TABLE OF CONTENTS

Executive Summary ii

Table of Contents x
  Appendices-Table of Contents xi

List of Tables and Figures xii

Acknowledgements xiii

I. Introduction 1

II. Management Assessment 6

III. Policy Assessment 29

IV. Transaction Log Analysis 69

V. User Assessment 100

VI. Conclusion and General Recommendations 130

Appendices Appendix 1

Appendix Table of Contents

Appendices appear after the final report text with a separate pagination.

Appendix II-1 Management Focus Interview Guide Questions 1

Appendix III-1 Analysis of Policy Documents 5
Appendix III-2 Implementation Review Checklist 25
Appendix III-3 Sample Implementation Review Grid for OESE 28
Appendix III-4 Web Policy Implementation Findings 31
Appendix III-5 Side by Side Analysis of Web Policy Documents 40

Appendix IV-1 "Log Analysis Tools: Site Server is on the Right Track" 60
Appendix IV-2 Department Path Report 62
Appendix IV-3 Search Form Using GET 75
Appendix IV-4 Search Results Using GET 77
Appendix IV-5 Search Form Using POST 80
Appendix IV-6 Search Results Using POST 82
Appendix IV-7 OESE Pages and Images Not Found 85
Appendix IV-8 Text of Suck.com Publication 89

Appendix V-1 Customer Service Data Collection Forms 92
Appendix V-2 Task Based Evaluation Forms 98
Appendix V-3 Log Files for Task-Based Test 104
Appendix V-4 WebMAC© Scoring Chart 114
Appendix V-5 Buttons Method Forms 116
Appendix V-6 Full Text of Buttons Reactions 121
Appendix V-7 Buttons Evaluation Page Images 131
Appendix V-8 WebMAC© Analysis Template Group 1 132
Appendix V-9 WebMAC© Analysis Template Group 2 134
Appendix V-10 WebMAC© Analysis Template Comparison 136
Appendix V-11 OESE Expert Evaluation Materials 138
Appendix V-12 OESE Expert Evaluation Form 140
Appendix V-13 OESE Evaluation Full Text by Subsection of Website 142

LIST OF TABLES AND FIGURES

Figure ES-1: Web-based Service Demands vs. Resource Support v
Figure II-1: Web-based Service Demands vs. Resource Support 7
Table II-1: Summary of Survey Questions 1-8 10
Table II-2: Summary of Questions 9-33 13
Table II-3: Average Responses to Questions 9 through 33 14
Figure II-2 Key Positions for Internet/Web Management 17
Figure III-1: Example of URL Truncation 31
Figure III-2: List of Department of Education Web Policy Documents 33
Table III-1: Operationalized Policy Criteria 39
Figure IV-1: Department Homepage Key Link Areas 78
Table IV-1: Internal Errors Within www.ed.gov 81
Table IV-2: Internal Errors Within Different ed.gov Servers 82
Table IV-3: External Errors to www.ed.gov 83
Table IV-4: Large Images with False Height and Width Attributes 84
Table IV-5: Pages with Excessively Large Images 85
Table IV-6: Pages with Excessive HTML Text 85
Table IV-7: Five Most Frequent First Requests 86
Table IV-8: First Request With Its Most Frequent Second Requests 87
Table IV-9: First and Second Requests with Their Most Frequent Third Requests 87
Table IV-10: Top Ten Second requests from www.ed.gov 88
Figure IV-2: Department Homepage Four Link Areas 89
Table IV-11: External Search Engine Results 90
Table IV-12: Internal Errors Within www.ed.gov/offices/OESE/ 96
Table IV-13: Internal Errors Within www.ed.gov outside of OESE/ 96
Table IV-14: External Errors from www.ed.gov 97

ACKNOWLEDGEMENTS

The study team could not have completed this project without the assistance of a number of people. We especially want to thank Keith Stubbs for serving as the study liaison at the Department of Education. His efforts in scheduling meetings, providing access to log data, and answering questions and providing additional information to the study team were essential to the success of the project. We also acknowledge the assistance from Kirk Winters and Sally Budd, also at the Department of Education, for their time and assistance.

In addition, numerous individuals at the Department of Education offered the study team information, comments, and suggestions during the various interviews and focus group sessions. While there are too many people to mention individually, the study team is very grateful for their time and interest in the project.

Finally, we are especially appreciative to Sarah Harwell and Jeff Pomerantz who served as Research Assistants on the study at the School of Information Studies. Their work in organizing and handling a host of endless details and logistics contributed significantly to the overall success of the study.

I. INTRODUCTION

Increasingly, Federal agencies rely on web-based technologies to provide a range of information resources and services. Indeed, the number and content of U.S. Federal websites continues to grow and expand as government agencies develop more uses and applications for these websites. The U.S. Department of Education (the Department) is one of those agencies that has made a conscious effort to use and develop web-based information resources and services as an important means for communicating with citizens in this country as well as users around the world.

The move to a web environment to provide information about the Federal government and its activities/programs, to provide direct and interactive services, and to communicate directly with users has been encouraged by the Clinton administration through the National Partnership for Reinventing Government (formerly the National Performance Review) and a range of other initiatives. As Vice President Al Gore stated in a 1997 Information Infrastructure Task Force Report (*Access America, Reengineering through Information Technology,* Washington DC: Government Printing Office):

> The idea of reengineering through technology is critical. We didn't want to automate the old, worn processes of government. Information technology (IT) was and is the great enabler for reinvention. It allows us to rethink, in fundamental ways, how people work and how we serve customers... [we will have] a government where all Americans have the opportunity to get services electronically and where, aided by technology, the productivity of government operations will be soaring.

Basically the policy message has been for Federal agencies to better exploit the networked environment and especially web-based services and resources as a means of serving the Nation's citizens more effectively.

The Department of Education has been one of a number of cabinet level agencies that has, in fact, committed significant effort to developing a website (www.ed.gov) as a means of improving access to and use of Department of Education programs and services. In light of the growth and development of the Department's website and related web-based services and resources, they contracted with the authors to conduct an assessment of the website. The assessment began September 1, 1998 and was completed in December, 1998.

PURPOSE OF THE STUDY

The goal of the project was to evaluate several of the Department websites in order to inform the Department's on-going efforts to improve these websites. Specific objectives that guided the study were:

- Identify factors that affect the overall success and usability of selected Departmental websites

- Examine the processes by which selected websites are managed and coordinated across the Department
- Review the ease with which selected Departmental websites could be navigated and the ease with which users could locate and obtain information and services from those websites
- Determine the degree to which the Department has developed an adequate policy system for operating the websites and the degree to which these policies recognize government-wide policy broadly related to website management and development
- Provide example evaluation techniques and methods that the Department could use/modify for future assessment efforts.

Underlying all of these objectives was the effort to make constructive suggestions for how these websites and the associated management/policy infrastructure might be improved to best assist the Department accomplish agency missions and operate its programs effectively.

STUDY APPROACH

The investigators believe that to best evaluate a Federal agency website a number of different approaches should be used. Thus, the study team employed four approaches to assess selected Department websites:

- **Management assessment**: This approach begins with a management perspective of how the agency is organized to manage Departmental websites in terms of developing content, adding and deleting pages, controlling quality, responding to customers, and evaluating the website (among other factors). At the Department of Education, this assessment was especially important, as there are a number of offices, contractors, and individuals who are involved in the organization and management of the website.

- **Policy analysis**: This approach stresses the degree to which the Department has developed internal policies to manage the website and the degree to which those policies are understandable and implemented. This approach also considers the degree to which existing agency policies do or do not recognize government-wide policies dealing with such topics as records management, privacy, Freedom of Information (FOI), security, Government Performance Results Act (GPRA), etc.

- **Log and transaction analysis**: This approach includes a range of assessment techniques that rely on data contained in the web server. A number of commercial packages are available or can be developed that will generate statistical data regarding the users, error messages, bad links, time on the site, links to other sites, etc. In addition, log analysis also includes a number of techniques of directly accessing the server and/or its various logs to better understand the way in which users use the website.

- **Usability testing**: This approach assesses the usability of the website from the perspective of users. Typically users examine the website in terms of content, ease of use, navigability, organization, availability and quality of help, etc. Usability testing can be done by specific targeted groups where individuals from these groups perform searches or attempt to access information from the web and provide an assessment of specific aspects of the website.

Our current view is that a meaningful assessment of a Federal website needs to draw upon all four of these approaches as each informs the other. Improved website "usability" results from all of the factors in each of the four areas outlined above.

METHOD AND DATA COLLECTION OVERVIEW

Members of the study team included the two principal investigators, Hert and McClure who are members of the faculty at the School of Information Studies; it included one adjunct faculty member, Rubin. Two doctoral students, Eschenfelder and Taffet, and two masters students, Abend and Pimentel, also participated on the study team. Thus, a significant amount of personnel was committed to the study over this four-month period.

The study team developed a time schedule to accomplish study objectives within the period of the study. There was some considerable discussion early in the project to clarify project goals and activities, agree upon specific websites to assess and specific Departmental offices for web analysis, and clarify some of the techniques for log analysis. There was also an effort to coordinate user data collection efforts at two national conference sites. These efforts for user-based assessment at national conferences, however, were not successful.

Members of the study team participated in two on-site visits to the Department for data collection and one visit to provide an executive briefing. They conducted a number of telephone interviews and email conversations with key individuals at the Department; and they organized a number of sessions with users to conduct usability testing. At various points in the study, the investigators employed the following data collection techniques:

- Focus groups
- Individual/group interviews
- Examination of Departmental documents
- Analysis of web server logs and reconstruction of searches
- User review of websites
- User surveys and group discussions
- Policy instrument(s) comparison and analysis
- Departmental staff survey.

Details on specific methods and data collection techniques employed are discussed in the appropriate sections later in this report.

After some discussion between the study team and Departmental officials, it was agreed that the study would have a primary focus on the Departmental home website at www.gov.ed. It was also agreed that the Office of Elementary and Secondary Education (OESE) would receive attention in the assessment as a means of demonstrating specific assessment techniques that might then be applied to other offices.

The study team worked closely with a Coordinating Team from the Department that included a representative from The Office of the Deputy Secretary, the Office of Educational Research and Improvement (OERI), and the Office of the Chief Information Officer (OCIO). The representative from OERI also served as the primary point of contact for the study team throughout the project. Responsibilities of the Coordinating Team included providing the investigators with various project information, reports, and policies; assisting them identify and contact potential website users to participate in the study; identifying participants for the on-site visits; organizing Department technical assistance such as obtaining log files; assisting with logistics for meetings with study participants; providing workspace and assistance to the investigators during their on-site visits to the Department; and reviewing a draft of the final report.

The study is limited for a number of reasons. The size and scope of the Department website is extensive making it impossible to assess but a small number of the total pages available. Thus, the study team focused on specific assessment areas and approaches as discussed above and detailed in the following sections. Further, the study encompassed a short period of time and had limited resources available for conducting the various analyses.

It should also be pointed out that much of the data collected came from interviews and focus group sessions. Such data are self-reported. While the study team incorporated procedures to check and validate responses as best they could, these self-reported data represent respondents' *perceptions* of activities. On one hand, these perceptions may not be agreed upon by others, or they may not adequately represent reality – on the other hand, perceptions often *are* reality for those working in a particular situation. Finally, it should be recognized that members of the study team are not as familiar with day-to-day operations and activities as are Departmental staff – thus, some findings and recommendations in the report may need to be qualified and put in context by those at the Department.

The study team took steps to ensure the validity of the findings by cross-checking responses from individuals against other groups of individuals as appropriate. In addition, during interviews and focus groups, an effort was made to elicit responses related to earlier findings by offering key issues for participants' comments, by obtaining views from a wide range of stakeholder groups, and by asking for comments on views that members of the study team had heard in previous sessions.

ORGANIZATION OF THE REPORT

The study covered a large amount of territory and the resultant report had to be organized quickly in a coherent manner. Thus, the study team organized the report by the four basic evaluation approaches outlined above. Within each major section, there is additional information that describes an overview of findings for that particular assessment approach, background information as needed, data collection methods, detailed findings, and issues and options. The evaluation of OESE followed a similar approach and findings related to OESE are presented within each section.

The report closes with a brief overview of key themes and issues identified throughout the study. In this final section, selected aspects of the findings and recommendations are brought together with some broad options for next steps that the Department may wish to take. Specific findings, issues, options and recommendations related to each of the four assessment approaches, however, will be found in the individual report sections.

A number of appendices follow the body of the report. In addition, two Notebooks containing supplemental policy information are provided separately. One is a compilation of Department of Education web policies and the second is a compilation of selected web policies from selected Federal agencies that may affect the development and management of Federal websites.

II: MANAGEMENT ASSESSMENT

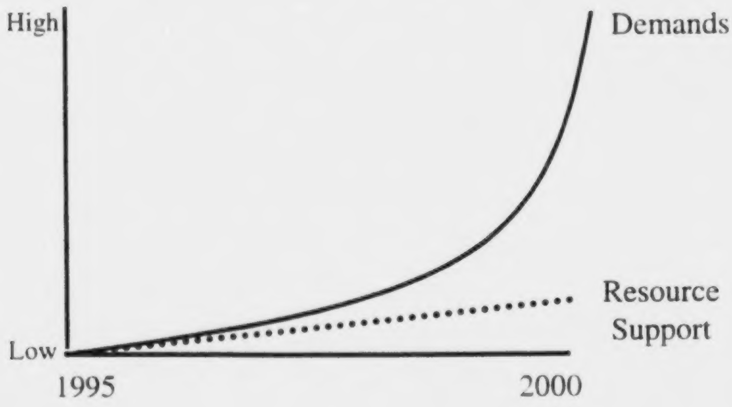
Any website evaluation should consider the context in which the website is developed and maintained. In particular, an evaluation of management issues associated with the website including organizational structure, communication patterns, staffing, etc. is essential to the development of recommendations and options that can be implemented by the organization. Thus, in this component of the project, the study team collected data to answer the following questions:

- What is the current status of the management activities and management structure associated with the website?
- What do stakeholders in the website perceive to be issues for the ongoing maintenance/management of a quality the website?

The study team's snapshot of the www.ed.gov website management is that the site has grown very successfully since its inception via the mechanisms that have been put in place (such as the IWG, the website standards and various policies and procedures, etc.). However, the site and its management are reaching a critical point. Resources and staffing for website management appear not to have kept pace with the exponentially increasing demand for the web content and functionality, nor for associated training and planning activities (See Figure II-1). The Department is still on an exponential growth curve in its application of the Internet. A number of Principal Operating Components (POC's) still have a desire to increase their web presence by adding additional content and/or using the web as a vehicle for business processes (such as grant submission online). This growth can be expected to continue since the ongoing development of the web technologies will always provide new opportunities for departmental activities to be accomplished via the web. The resource and staffing base has not grown concomitantly.

Thus, while content and functionality are still being added to the site, generally in a timely manner, staff involved in various website management activities feel over-burdened, unable to plan strategically, or manage except in crisis mode. Time and resources to continue to update skills are also not available. While this pattern may be sustainable in the short term, it is likely that problems in the areas identified below will grow and impact the ability of the Department of Education to maintain a quality website.

Figure II-1 Web-Based Service Demands VS. Resource Support



OVERVIEW OF KEY FINDINGS

The study team identified a number of key issue areas related to the Department’s management of the website. These are briefly summarized here with further discussion in later parts of this section. Options for the Department based on these findings are also provided at the conclusion of this section.

- **Purpose of the website**: Different stakeholders hold different perceptions of the purpose of the website. The website cannot successfully fulfill all these purposes simultaneously.

- **Organizational structure** associated with the website management: There are a wide variety of the website stakeholders throughout the organization as well as at least two teams of contractors. A mix of formal and informal management and communication structures has developed. These structures may not be sufficient as the website content and functionality continues to expand.

- **Coordination of communication**: Communication is largely “vertical” with each POC independently contributing to the website (via the OERI POC liaison). This has the potential to lead to: duplication of information on the website, inaccuracy/inconsistency of information on the website, and inadequate sharing of expertise and insights among POC’s. Communication between agency POC’s and the contractor is also “vertical” with the majority of communication flowing through the OERI POC liaison or Keith Stubbs and/or his staff and back.

- **Internet Working Group Role**: The IWG, while having a charge (as outlined in the Nov. 19, 1996 memo from Mike Smith and Leo Kornfield), has assumed an unclear role in the management of the website. Some IWG members report doing much substantive work, others report being unclear what their responsibilities are.

- **Contractor Relationships:** A number of participants indicated dissatisfaction with the Application Contractor's performance. While the contractor has been responsive to a steady stream of requests for quick-turnaround work, other aspects of performance specified by the contract have not been fulfilled. The contract indicates that the contractor should furnish a wide variety of management reports; these have not been provided. Additionally, participants mentioned problems with knowing the status of various projects, who was responsible (on the contractor's end), and receiving useful communication via email. Several participants pointed out that the contractor should be providing training but has not done so. The relationship between the Applications Contractor and the Infrastructure contractor may also be a source of coordination problems.

- **Website Evaluation**: A number of evaluation and approval policies are in place. These include the 6 month review by POC's of their content, the design standards, the approval of publications by the Office of Public Affairs and the monthly web statistics generated by the contractor and distilled and disseminated by Keith Stubbs. However, there is no formalized process for oversight of content consistency, accuracy, or clarity (though some occurs on an ad hoc basis). Feedback from customer service personnel on user problems and questions appears to be underutilized as a source of information for website redesign.

- **Website Management Staffing**: There are insufficient personnel devoted to the website content creation, management, training, and evaluation. Participants, almost uniformly, expressed frustration about the number of activities for which they and others were responsible. Keith Stubbs has insufficient number of staff with insufficient skills. Keith himself has too many job responsibilities, and the POC representatives often have the website activities added on to their regular duties.

- **Management of Customer Relations:** The Department has a well-developed set of avenues by which the public may comment or ask questions. However, it does not appear that information on commonly asked questions (and their answers) is well shared across the Department. The website has added another set of avenues for customers to ask questions; these can draw on expertise from existing customer service expertise as the well provide new models for satisfying customer inquiries.

- **Strategic Planning for the Website**: The Department has an excellent long term vision of how it wishes to leverage Internet technology in support of its goals. Many staff report, however, that there is little time during their work weeks in which to think creatively or strategically. This lack (see staffing above) may impact the Department's ability to continue to grow the Internet site.

DATA COLLECTION

The team collected data via interviews and surveys from a variety of stakeholders. Data were collected via interviews and surveys. Two members of the study team (Hert and Eschenfelder) interviewed personnel at the Department on October 6-7, 1998. The objectives were to gather data regarding users of the website as well as to preliminarily understand the website's management structure and the relationships among information dissemination activities via the website and other channels at the Department (such as the National Library of Education). The study team suggested several types of staff who should be interviewed and the Coordinating Team at the Department identified specific participants and scheduled interviews.

During this site visit, the team members worked from interview guides-one that focussed on user aspects, including mechanisms for responding to customer inquiries (Appendix V-1) and another that focussed on management aspects (exclusive of customer service functions) which is presented as Appendix II-1. For each interview, participants introduced themselves and the study team determined which instrument was most appropriate given the person's (or people's) job responsibilities. The profile of participants in presented in Section V of this report.

These interviews enabled the team to form a preliminary sense of the website management. Additional interviews were scheduled in November 1998 (Nov. 4-5). As in the previous round of interviews, the study team suggested appropriate personnel and the Coordination Team identified specific staff and scheduled the interviews. Study team members Hert and McClure jointly and individually interviewed additional agency staff with a variety of roles in the website management. These staff included the Internet Working Group (IWG) Co-Chairs (3), members of the Internet Working Group (21 in large group interview, 5 in small group interview, 2 in individual interviews), Applications Contractor Staff (2), Principal Operating Center Liaisons in OERI (5), and members of Sally Budd's staff in OCIO (2). Appendix II-1 is the interview guide. Many interviews included a policy component as well and findings from that component are presented in Section III.

In addition to these on-site interviews, Hert conducted a telephone interview with 4 members of the Office of Elementary and Secondary Education on December 3, 1998. The purpose of the interview was to understand the management of the OESE website and how its management (and the website) related to the management of www.ed.gov.

The study team also prepared a self-administered survey (Appendix II-2) which they distributed during the Internet Working Group meeting on November 5, 1998. IWG members were encouraged to complete the survey during the meeting and to take a copy to distribute to appropriate staff within their units (to be returned via fax). A total of 24 surveys were returned in time for analysis.

Throughout the data collection process, a variety of efforts were made to assess the validity of the data collected, including triangulation (of data across multiple participants), member-checking (where people are provided with researcher reconstructions of the data collected and asked for comment), and debriefing with the Coordinating Team at the Department.

FINDINGS

Most of the findings presented below represent distillations of information gathered via the interviews and survey instruments indicated above. The survey considered both management and policy aspects of the site and thus a brief statement of findings from the survey is provided separately. The OESE interview is also reported separately, though some of its data have also been integrated into the other areas of findings.

Findings from the Survey Instrument

A total of 24 departmental staff returned a completed survey (Appendix II-2). These staff included members of the IWG, various POC personnel and staff with specific web management responsibilities. Table II-1, II-2, and II-3 provide summary information from the survey.

The respondents of the survey bring much knowledge of the Department to their web activities, with an average of over 12 years of employment at the Department. Involvement in web activities is naturally much lower with an average of 2.5 years. When asked about the number of hours spent in various activities (Table II-1), respondents tended to either spend little time (1-3 hours/week) or a great deal of time (more than 8 hours/week) which may reflect different job responsibilities for the respondents. Strikingly, when asked about web evaluation activities, almost all respondents (N=18) reported that they spent less than one hour per week on this activity.

Table II-1: Summary of Survey Questions 1-8
N=24

Question		Average of Responses
1	Number of years employed by Department of Education	12.77
2	Number of years employed by your current office or program	7.97
3	Number of years experience providing information and services via the Web	2.50
4	Number of years serving as IWG representative	1.38

Questions 5a-5e asked how many hours respondents spent in an average week on five activities. The following legend explains the values in the Response column:

- 1=less than one hour
- 2=1-3 hours
- 3=3-6 hours
- 4=6-8 hours
- 5=over 8 hours

Question		Response	Frequency of Response
5a	Web planning (e.g. goal setting)	1	5
		2	8
		3	3
		4	0
		5	8
5b	Web development (e.g. design, layout)	1	8
		2	7
		3	2
		4	1
		5	6
5c	Web management (e.g. maintenance, updating)	1	6
		2	4
		3	3
		4	3
		5	7
5d	Web evaluation (e.g. customer survey)	1	18
		2	3
		3	0
		4	0
		5	3
5e	Other web related activities	1	4
		2	6
		3	1
		4	3
		5	8

Question		Average of Responses
6	How many people in your office are significantly involved in web development activities?	4.26

For questions 7 and 8, the following legend explains the values in the Response column:

- 1=0-100
- 2=101-1000
- 3=1001-10,000
- 4=greater than 10,000

Question		Response	Frequency of Response
7	Please estimate the number of web pages which you personally oversee.	1	15
		2	3
		3	3
		4	1
8	Please estimate the number of web pages which your office oversees.	1	11
		2	3
		3	4
		4	2

Questions 9 through 33 asked respondents to indicate their agreement or disagreement with various statements related to web management and web policy. Table II-2 summarizes the data by question and table II-3 provides a graphic representation of the averages). The average for many questions was neutral (in the middle of the scale) (questions 10, 13, 14, 15, 17, 19, 22, 24, 25, 29, 30, 32), only slightly negative (slight disagreement with the statement) (questions 11, 16, 18, 21, 28), or only slightly positive (questions 20, 26. 27). Neutral answers may mean either that a respondent was not clear on how he or she felt or that the status quo was not a problem from his or her perception.

The negative averages point to a few concerns. A strong negative was reported (average = 3.33) for the statement "I currently possess all the technical skills and knowledge I need to develop internet based services for my office or program." This is a concern that was also expressed in the interviews. A strong negative was also reported (average = 3.48) for the statement "I need a great deal of outside (OERI/contractor) support for my office or program's web management efforts." An average of 3.09 for the statement "The processes by which my office or program evaluated our website are effective" was calculated suggesting that evaluation is not well integrated into website management at this time for some offices.

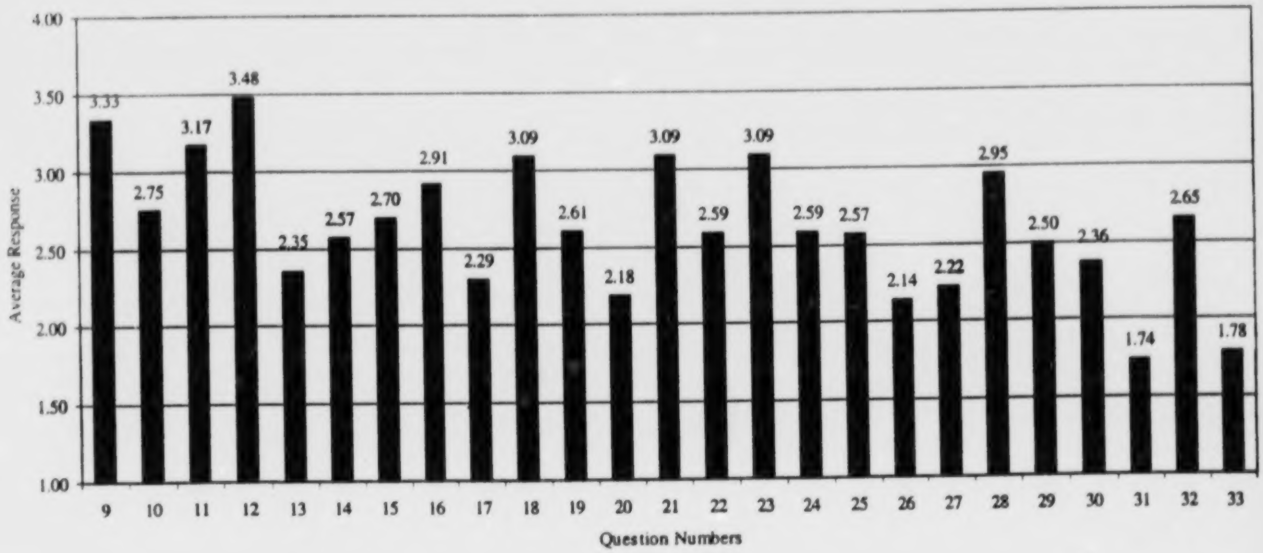
Two statements had averages that were strongly positive. These were "The IWG should have the following role: A governing body to develop Department of Education web policy," (average = 1.74) and The IWG should have the following role: An advisory and educational role," (average = 1.78).

Table II-2: Summary of Questions 9-33
N=24

Question		Average of Responses 1=Strongly Agree 5=Strongly Disagree
9	I currently possess all the technical skills and knowledge I need to ***develop*** internet based services for my office or program.	3.33
10	I currently possess all the technical skills and knowledge I need to ***manage*** internet based services for my office or program.	2.75
11	I need a great deal of outside (OERI/contractor) support for my office or program's web ***development*** efforts.	3.17
12	I need a great deal of outside (OERI/contractor) support for my office or program's web ***managemen***t efforts.	3.48
13	I am completely satisfied with the support I receive from ***OERI.***	2.35
14	I am completely satisfied with the support I receive from our internet applications ***contractors.***	2.57
15	I am satisfied with the quality of my office or program's website.	2.70
16	My office or program has a formal management system for its web pages.	2.91
17	Procedures for placing information on my office or program's website are very clear.	2.29
18	I regularly review web statistical data to better understand usage of our office or program website.	3.09
19	My office or program always tests pages for disability and low end browser capabilities.	2.61
20	My office or program has established procedures to process/answer/forward email inquiries.	2.18
21	My office or program always completes semi-annual reviews of its website.	3.09
22	My office or program routinely checks for outdated information on its website.	2.59
23	The processes by which my office or program evaluates our website are effective.	3.09
24	I am very familiar with the Department of Education's formal World Wide Web policies and procedures for privacy	2.59
25	I am very familiar with the Department of Education's formal World Wide Web policies and procedures for security	2.57

26	I am very familiar with the Department of Education's formal World Wide Web policies and procedures for access	2.14
27	I am very familiar with the Department of Education's formal World Wide Web policies and procedures for updating content.	2.22
28	The other people in my office or program who are involved with web development activities are very familiar with the Department of Education's formal World Wide Web policies.	2.95
29	The Department of Education web management policies and procedures are effective.	2.50
30	The IWG provides an effective forum to exchange information regarding web development at the Dept of Education.	2.36
31	The IWG should have the following role: A governing body to develop Department of Education web policy.	1.74
32	The IWG should have the following role: An oversight authority to approve or block a given office or program's web development projects.	2.65
33	The IWG should have the following role: An advisory and educational role.	1.78

Table II-3
Average Responses to Questions 9 through 33
1=Strongly Agree
5=Strongly Disagree



BEST COPY AVAILABLE

Summary of Open-Ended Questions

Questions 34 through 38 asked the respondents to answer open-ended questions. Question 34 asked respondents to identify the single most important change the Department of Education could make to its web management procedures. Options identified by respondents were to: designate a webmaster, identifying one office or individual to lead the project; simplify the web management process; enforce existing policies and procedures to a greater extent; and promote communication between staff regarding existing procedures and policies.

In question 35, respondents were asked what is the single most important change their program or office could make to its web management procedures. The issue of communication surfaced again in these responses: respondents indicated that web management procedures need to be disseminated to personnel, and disseminated in multiple formats for the widest audience. Respondents also recommended purchasing and using website management software and improving the website updating process. The need for web planning and coordination to be done by central management in POCs was articulated and gave emphasis to the desire for centralized management indicated in responses to question 34.

When asked in question 36 what is the single most important change the Internet Working Group (IWG) should make to Department web policy, respondents indicated they felt that IWG should be more diligent in monitoring and overseeing the process of website management and that it should focus on overall policy and planning. Respondents also indicated that IWG should take more of a role in deciding the ultimate purpose of the Department's website. In addition, responses indicated the desire for business units or offices to be given more of a role in the website development process.

Respondents overwhelmingly answered question 37, what is the purpose of the Department of Education webpage, that the purpose of the Department of Education's webpage is to disseminate information—educational information—to the Department's customers in an understandable, straightforward manner. Some respondents felt that the Department's website should act as a gateway to direct users to critical resources, and ohers felt the website exists to promote bureaucratic agendas. One respondent indicated that the website should build a community of those interested in education information and policy. Another wrote that its purpose was to provide faster, value-added services to customers.

Finally, not many respondents chose to answer question 38 which solicited further general suggestions. Among the suggestions, though, was one which advocated forming a group of external customers to review the Department's website and provide user feedback. Other suggestions were to improve the searching capabilities of the website and that the Department should create webpages specifically for use by children. The opinion that information about web management procedures and policies is not well disseminated among staff was again voiced.

Findings from the Interviews

Purpose of the website

As part of the interviews and survey, the study team asked participants to indicate what they thought the purpose of the website should be (or currently was). They offered a range of answers that can be summarized into the following categories:

- Provide access to the Department's resources and services, to disseminate information
- Serve as a gateway to direct users to critical resources
- Promote bureaucratic agendas
- Build a community of those interested in education information and policy
- Provide faster, value-added services to customers

The team stimulated discussion in the interviews about these purposes to assess the extent to which stakeholders had shared perceptions of the purpose or purposes as well as to elicit both negative and positive reactions to various purposes.

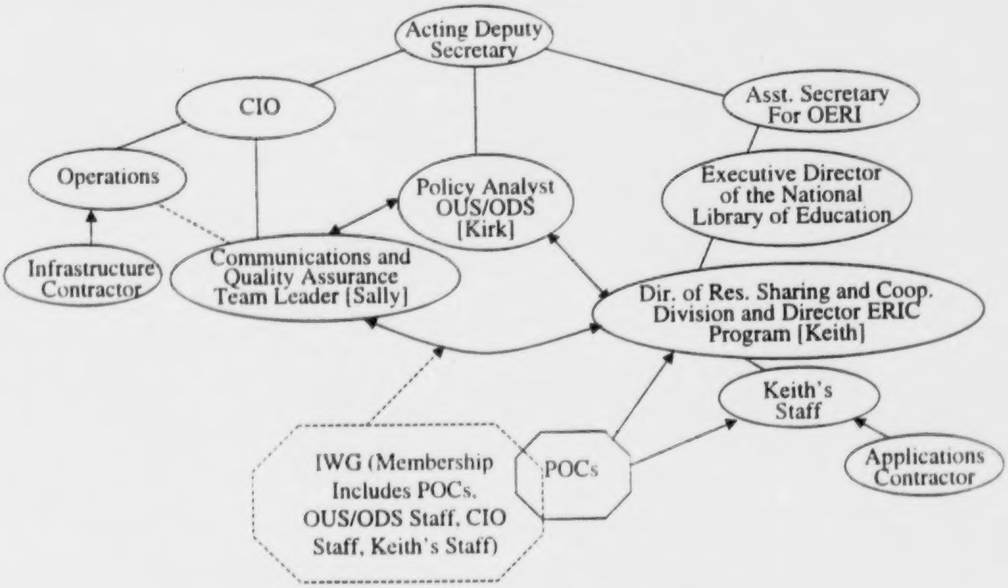
The team found that while most participants did think that the site should provide access to resources and services of the Department that there was disagreement over whether it was appropriate for the site (or various office sites) to advance particular political or social agendas. Some participants felt quite strongly that the website formed a very important component of the larger public relationships mission of the Department to keep the Department and the state of education in the public eye, while others were vehemently opposed to any "politicization" of the content or mission. This issue was considered both at the level of the www.ed.gov site as well as the individual office website level, with one IWG representative indicating that her office was actively moving the website content in the direction of promoting a social/political agenda. Overall, there were widely differing views as to the primary goals of the website.

Organizational structure

Based on the interviews and reviews of documents, the team developed Figure II-2 to represent the basic organizational relationships associated with the management of the www.ed.gov website. The graphic represented both parties with responsibilities associated with the website content and management as well as communication flows.

The Co-chairs of the IWG provide oversight of web-related, administrative activities. The three co-chairs work closely together and have established a personal and warm rapport amongst them. They are assisted in policy development by the Internet Working Group which consists of representatives from across the Department and includes staff from OERI and OCIO with various the web-related responsibilities. Other members of the IWG represent their POC's on the committee and are also the people who work with the POC liaisons (in OERI) in providing content to the web.

Figure II-2 Key Positions for Internet/Web Management


Acting Deputy Secretary
CIO
Asst. Secretary For OERI
Operations
Policy Analyst OUS/ODS [Kirk]
Executive Director of the National Library of Education
Infrastructure Contractor
Communications and Quality Assurance Team Leader [Sally]
Dir. of Res. Sharing and Coop. Division and Director ERIC Program [Keith]
Keith's Staff
IWG (Membership Includes POCs, OUS/ODS Staff, CIO Staff, Keith's Staff)
POCs
Applications Contractor

The actual webserver is maintained by a contractor (called the Applications contractor) funded out of OERI's budget with Keith Stubbs as the COTR. Other components of the Internet infrastructure, (such as telecommunications), are managed by a different contractor (the Infrastructure contractor) funded by OCIO. Interview participants suggested that the division of responsibilities between these contractors is not always clear.

The Department's POC's are responsible for creating and maintaining content on the web (except for the highest level pages which is created from content available in the ED Initiatives newsletter, with OERI updating the Most Requested Items section, and with the IWG responsible for the rest of the content). Each POC has a person (most of who are also an IWG representative for the POC), who works with a POC liaison in OERI by providing content (which may be marked-up or not). The OERI POC liaison provides design suggestions, content suggestions, and other help as requested as well as serves as the point of contact between the POC and the applications contractor which actually manages the website. POC personnel do not communicate directly to the contractor-sending the majority of communication through the OERI POC liaison. The OERI POC liaison is responsible for forwarding content to the contractor.

This structure is somewhat congruent with Departmental structure (as represented in the organizational chart located at http://www.ed.gov/people.html#org). Several differences should be noted. In the Departmental structure, several offices do not report to the Office(s) of the Deputy Secretary or Under Secretary. More importantly, the organizational chart does not indicate direct connections among OUS/ODS, OERI, and OCIO, the three offices that are most highly visible in the website management structure (and in resource allocation). Additionally, responsibilities for various aspects of management are not always clear nor is associated oversight. The conclusion of the study team is that the current web management structure, to some extent, represents a unique partnership and joint leadership style that the three IWG Co-chairs have managed to create.

Participants praised the current leadership of the website for being responsive and knowledgeable. They especially praised Keith Stubbs who was often identified as the pivotal person in getting the web up and running and keeping it working. Participants recognized the hours Keith has committed to the web and some worried that no one else had the knowledge to fill-in for him if the need arises. Most participants reported that Keith would be the person to turn to if they had problems related to the web activities.

Our observations of meetings, and data from the interviews also indicate that the IWG Chairs work extremely well together and have parlayed good interpersonal relationships into a team that brings vision, management expertise, and a wide range of constituents together. Through their individual efforts, the website has gone from a vision to a well populated and widely used tool.

Participants raised some concerns about the organizational structure. Along with reporting the centrality of Keith's role in the website management, many participants also indicated concern that the organization was overly reliant on his unique expertise. There was some concern that too many responsibilities were funneled through his office and at times, due to limited staffing, delays and bottlenecks could occur. Each OERI POC liaison has an assigned backup however for higher level decision making tasks, these backups may not be sufficient.

There is also little formal structure to support POC's interaction concerning web activities amongst themselves. Individuals have developed informal contacts across the Department, including contacts in closely related programmatic areas but there was concern on the part of participants that without a more formal mechanism for interacting, some opportunities for sharing expertise or information about problems that have arisen are missed.

While not indicated on Figure II-2, many participants, especially those on the IWG, also indicated that their job responsibilities had expanded to include web activities. According to our participants, most of the POC representatives took on the web-related activities in addition to all other activities for which they were responsible. They expressed the concern that often web-related activities can not be a first priority due to their other work. Some the web-related activities "slip" until they have spare time in which to accomplish them. A concern expressed by some was that the individual office or POC also had not prioritized the web within the office and thus the solicitation of content, updates, and various other help from other members of the office was often difficult.

Figure II-2 is a map of the management structure associated with the www.ed.gov site. It is important to consider that a number of additional webservers exist within the Department (and external to the Department such as http://pfie.ed.gov (a new site in partnership with USA Today, and the Project EASI server) which are not within this management framework. The Department has a policy for determining when a server can exist separately.

Coordination of Communication

As Figure II-2 indicated, communication is largely "vertical" with each POC independently contributing to the website (via the OERI POC liaison). Most participants reported that information (both the web content and other types of the web-related information) flowed from a POC only to OERI, then to the contractor. This has the potential to be a bottleneck in the processing of information when the OERI POC representatives are inundated with the web-related requests. Additionally, these staff are not able to prioritize across the POC requests. When problems arise, Keith Stubbs was uniformly mentioned as the person to speak with in order to achieve resolution. This is another potential bottleneck depending on Keith's availability. The POC liaison forwards the POC requests to a counterpart on the Applications contractor's staff. This person then distributes the work. This is the third possible bottleneck in the communication process.

Throughout the interviews, a concern was expressed related to the sharing of expertise and insight across the department. Some staff have been identified as knowledgeable and are often tapped for their expertise although it is not in their job responsibilities to provide Internet training support. These staff are called on in an ad hoc (and frequent!) capacity to help others build their web authoring skills, site design skills, and resolve day to day problems. Lack of an adequate training budget for web activities is a problem. A recent email from Keith Stubbs to the study team (Keith Stubbs to Charles R. McClure, 24 November 1998) indicated how small training budgets currently are. In Keith's estimation, his training budget allows him to send a staff member for training once on the average of every 8 years.

The IWG as a venue for information exchange was perceived as being inadequate—the meetings are too large or there is insufficient time for the level of exchange needed. The verticality of communication has meant that some "reinventing of the wheel" and "stovepiping" has occurred. Other problems which were mentioned included the duplication (and/or inconsistency) of information (one POC representative reported that there the were at least 3 different lists (all wrong) of referrals in one area because the information was not easily shared).

Internet Working Group Role

Participants expressed different perceptions concerning the purpose and efficacy of the IWG. Purposes expressed were as a policy-making group, as a place for learning and sharing expertise, and as an oversight committee.

There was also a diversity of perceptions on the efficacy of the group. Several participants reported that the real work of the IWG is done by various IWG taskforces or by individuals who are charged with various tasks. Another perception that was expressed was that the IWG didn't accomplish much—in fact it was unclear to several participants what their responsibilities were as IWG members. They thought that having a "job description" which outlined the responsibilities of an IWG member or a POC representative would be helpful in educating them. When asked if the IWG was useful for sharing information, there was a sense among the 5 members of the IWG asked this question, that there was insufficient time within the meetings for this to be accomplished.

The survey instrument solicited suggestions about the most important changes the IWG could make to web policy. Respondents indicated that the IWG should be more diligent in monitoring and overseeing the process of website management and that is should focus on overall policy and planning. Responses on the survey indicated that the IWG should take more of a role in deciding the purpose of the website. Additionally, the IWG should organize or develop more training programs.

Contractor Relationships

A number of participants indicated dissatisfaction with the Internet Contractor's performance. The contract specifically identifies a wide variety of management reports which should be provided on a regular basis. The contractor provides the summary statistics from WebTrends but apparently none of the other reports. Additionally, respondents who spoke about the contractor reported that it was difficult to determine the status of various requests that had been sent to the contractor, how those requests were being prioritized on the contractor's side and which staff person was responsible for a particular request.

Finally, these respondents expressed dissatisfaction with day-to-day communications via email with the contractor staff. Oftentimes, incomplete information is given in emails making tracking of problems difficult. Respondents indicated that these problems made it difficult for them to manage their workflow and to interact with other Departmental staff who needed information on the status of particular web activities.

The team was not able to speak with staff from the Infrastructure contractor and many respondents did not provide any information on this contractor. Those that did, suggested there was poor communication and coordination between these two contractors. The mere existence of two contractors with a role in the provision of web servers may also be a source of coordination problems.

Website Evaluation

A number of evaluation and approval policies are in place. These include the six month review by POC's of their content, the online customer survey, the design standards, the approval of publications by the Office of Public Affairs and the monthly web statistics generated by the contractor and distilled and disseminated by Keith Stubbs. These provide an excellent start in tracking usage and other concerns with the website. The study team identified several other areas for which evaluation is currently ad hoc.

At this point, the POC's are responsible for assessing the content on their component of the site at least every six months. Between the reviews, some assessment occurs on an ad hoc basis. Participants reported that if they notice something is out of date or inaccurate, they attempt to address it or send the information to the person who they think can resolve it. However, there is no review that stretches across all website content. Standards are in place for "look and feel" of content on POC websites, but there has been only ad hoc review of how the websites and content of individual websites relate to each other, is duplicative, or inconsistent. Some participants expressed a concern about having too many "front doors" to the Department, with each POC potentially attempting to have its website serve as a front door. Also expressed was the concern that "look and feel" differed among the websites.

Feedback from customer service personnel on user problems and questions also appears not to be well integrated into the evaluation process. The team's interviews with customer service personnel revealed a wealth of expertise within the agency, extensive sets of referrals, and sets of answers to questions. These customer service personnel have a good feel for the particular needs and problems of the customers that they tend to service. They have developed strategies to quickly turnaround requests, and to provide the best information and referrals. Unfortunately, (while not specifically a web management problem), the activities of these personnel are not well coordinated which results in duplication of effort, some customers potentially falling through the cracks, and misinformation. From a web management perspective, there appears to be no mechanism by which the information these personnel have accumulated about customer needs and problems can be fed into system redesign. Contractor staff also have a good deal of knowledge concerning customer complaints, problems, and needs which has not been shared with the department except in an ad hoc fashion.

Some customer service units, such as 1-800-USA-Learn have a well-developed training program and problem tracking system in place. This might form a model for similar efforts in the web environment.

Website Management Staffing

One of the most clear dimensions of the interviews was the level of frustration many participants expressed related to how much effort web content creation and management entailed. For most participants, the web was an "add-on" to an already too heavy plate of duties and as the desire for more content on the web has increased, this work has become burdensome. Several participants did comment that there may be a tendency to develop web presences that are not sustainable given currently staffing levels and expertise.

Participants commented fairly uniformly on how well Keith Stubbs and his staff perform given the number of responsibilities they have. There is a great deal of support for Keith and his staff, and a concern that the Department needs to "clone" Keith and provide him with additional staff immediately and additional staff if the web is to continue to grow.

In one group interview, Hert asked participants to indicate the skills necessary to do the kind of jobs that the OERI POC liaisons currently do. The skills needed were: technical, negotiation, presentation, editorial, layout and design, management, organizational (content and time), costing (to tell POC's how much a given design might cost), and political. Knowledge of the department and its customers was also key. In other interviews, many participants commented on the lack of technical expertise present in the Department. A few people have good skills; they are called on extensively, but many POC's lack personnel with even basic HTML skills, let along the web design skills that would enable them to take on more design responsibilities, thus freeing up Keith's staff for other activities.

Lack of adequate training for web-related tasks was mentioned by several participants. The paucity of funds devoted to training was also raised as an issue.

Strategic Planning for the Website

The Department has an excellent long term vision of how it wishes to leverage Internet technology in support of its goals. Many staff report, however, that there is little time during their work week in which to think creatively or strategically. This lack may impact the Department's ability to continue to grow the Internet site.

Currently, little prioritization of tasks/projects seems to be occurring. Either staff need to have less on their plates or a system for prioritization needs to be established and disseminated. Clarification of responsibilities for various management activities (such as soliciting customer feedback, analysis of web logs, etc.) will assist the Department in its ongoing planning and allocation of resources.

Findings from the OESE Management Interview

One member of the study team conducted a telephone interview with four members of the Office of Elementary and Secondary Education on December 3, 1998. Participants in the interview all had an interest in, as well as some job responsibilities related to, the OESE website. The interview was structured according to the management interview guide in Appendix II-1.

Participants agreed that currently most of the content of the site, as well as its structure, supported those who were looking for funding or who were already grantees. The Safe and Drug-free Schools program was thought to attract a more diverse audience. There was some discussion of whether the site's current focus on grantees was appropriate, and it was generally considered so, though it was also thought that finding ways to extend its reach to other audiences might be worth investigating.

The relationship of content on the OESE site to the www.ed.gov site was also discussed. The participants expressed being overwhelmed by content on the www.ed.gov site and were frustrated with the difficulty of finding OESE materials via the www.ed.gov homepage. To get to OESE requires navigation through several pages, and it is also not clear which programs are run out of the OESE prior to that point or by using the programs and services button. It was recognized that www.ed.gov provides a valuable front door for users. The desire to have more visibility for news items from the office and a greater presence for the office on the homepage was mentioned.

The discussion also considered management aspects of the OESE website. A concern was expressed that within OESE, internet activities or having an internet perspective hasn't yet been integrated into the OESE mainstream. This sometimes means that content can not be updated as quickly as desired or that it is not made available in forms to go on the web (thus resulting in a delay for markup by the contractor). Staff in the office lack technical expertise to do HTML though an effort to create upward mobility positions (where people could gain new skills such as these) is under way.

Currently, the POC representative works with several other staff to get content and make it ready for the web. At least one other person in the Office is able to send materials directly to the office's OERI POC liaison. This system seems to be working successfully.

The interviewer asked the participants if the process of going through the OERI POC liaison to the contractor was working. One person indicated that it provides a bit of a review process which helps to prevent "ugliness" and that so far this process hadn't created an undue delay or other difficulties. This person did indicate that it was sometimes necessary to "hound" the POC liaison and/or the contractor.

The relationship of OESE to other POC's was also discussed. Participants indicated that more sharing of information about web activities and problems would be desirable. One person said that there should be a group specifically devoted to sharing ideas about websites. Other participants indicated that they lacked skills to create websites and that communication and training with other POC's would be helpful.

Key Findings

Overall, the key findings from this interview are that, like www.ed.gov, the OESE website activities are under-resourced. This has resulted in less than current information on some parts of the site and some offices within OESE not yet having a web presence. Internal management of the site, given those constraints, appears not to be problematic. There is however, a great need for staff with the appropriate skills and sharing of information across POC's. The dissatisfaction expressed about a presence on the www.ed.gov site is also worth noting.

OPTIONS FOR MANAGEMENT OF WWW.ED.GOV

Drawing on the data collected via interviews and surveys as well as on the Project Team's background in the website evaluation and management, the team has a picture of the www.ed.gov site and its management as being at a critical moment in its development. The site has grown quite successfully to date through the efforts of many hardworking individuals. As management issues have arisen, a number of structures e.g. the IWG) have been put in place to support the ongoing development of the website. The continuing exponential growth in the web functionality and demand for a web presence is causing these structures to feel strain. Outlined below are a set of options that the Department might consider as it looks to improve its web presence.

Purpose of the Website

The clarification of purpose of the website for both internal and external audiences might facilitate efforts to continue to present an integrated website. Given that there are likely to be multiple purposes, it may be helpful to determine which purposes take precedence over others as new content and functionality are added. Recent additions of servers within POC's, outside of the www.ed.gov management umbrella also suggests that the role of www.ed.gov might need to be reestablished in light of these other efforts.

Organizational Structure

The existing structure has several potential bottlenecks-largely in the interface area between the Department and the Applications contractor (with OERI and Keith Stubbs forming the interface). Building redundancy in that area or decentralizing that interface may be necessary as increasing amounts of content needs to flow to the contractor and as new functionalities are requested. An assistant to Keith, partitioning Keith's responsibilities among multiple people, or enabling individual POC's to interact directly with the Applications contractor might all be employed.

Such strategies may come at a cost. The current structure, by centralizing responsibility and channeling it, allows for a good deal of oversight of content acceptability, etc. If the decentralization strategies indicated above are employed, other mechanisms to provide oversight will probably need to be put into place.

Mechanisms which foster interaction among the POC's seem warranted based on the study findings. These might include monthly training sessions, a listserv for those interested in website issues, or presentations by POC's on their current activities.

It may also be necessary to consider the establishment of some form of content oversight body or staff. Right now, with each POC being able to control its own content, there is some likelihood of redundancy or inconsistency of information across the website as a whole. In would be worthwhile for someone knowledgeable with all the Department's operations to target several content or programmatic areas that cut across organizational boundaries and examine how information related to that area is presented on the site. If serious inconsistencies or redundancies are noted, an oversight review process might be well worth considering.

Coordination of communication

Additional vehicles (beyond IWG meetings) might be put in place to share expertise across the agency. The Internet Contractor is supposed to provide training services-these could be exploited to enhance internet skills for department staff.

A system for tracking task status could also be put in place. The TeamSite software being considered by the Department may have the necessary functionalities. The system should provide a record of when tasks are requested by POC's, when the contractor anticipates their completion, when they are initiated by contractor staff, and completed. It should also provide a record of communications related to the task. Such a system will also provide useful evaluation information on task turnaround and successful completion.

Customer service information could also be better coordinated. Again, a tracking system that could monitor which questions had been answered (e.g., Frequently asked questions) and be shared across the Department would reduce redundant efforts to answer the same questions. Placing this information on the web might also reduce questions from customers. The information that customer service-oriented staff have acquired about customer needs and problems should be formally channeled into evaluation activities.

Internet Working Group Role

Members of the IWG seem interested and knowledgeable about the Department, and committed to the web. These attitudes are probably being under-exploited given that some members of the IWG reported that they were not sure what they are supposed to be doing. A "job description" of an IWG representative might be written. This would both inform current IWG members as well as enable them to convince their POC's of the level of effort needed to maintain a viable the web presence. POC's could use the description to better match IWG membership to staff skills.

Survey results indicated fairly strong interest in fostering the role of the IWG as advisory and educator and as developer of policy, while there was not a sense that it should be an oversight committee concerning office activities. The IWG is also playing the role of developer of policy but it appears that further activities in the area of advising and educating might be appropriate.

Contractor Relationships

It is critical that the contractor be assessed for contract performance. The contract has a set of excellent performance measures with clear rules for their application as well as success criteria. The contractor can play a larger role in various training related initiatives, offering website development expertise, and providing the data that facilitates the Department's decision-making processes and compliance with GPRA requirements. These roles are explicit in the contract; thus this should not present contractual problems.

Website Evaluation

The current evaluation efforts of the Department are well worth continuing. Data from the customer survey are useful as are the NetTrends report. Other evaluation activities might also be considered. Gathering additional information from users, certainly the hardest part of any website evaluation, would be helpful. One strategy a number of organizations employ is the development of an interested and committed group of users who regularly comment on the site and its contents. Finding a mechanism for sharing information about customers that access other channels would also be appropriate. See Section III for additional discussion of evaluation.

Website Management Staffing

The study team believes that the Department is facing a critical lack of staff in the area of website creation and maintenance. This lack runs from personnel with basic coding skills to those who can think strategically about the role of the web in the organization. Staffing is the most pressing problem that the organization faces with regard to the success of its website. Additional staff are needed within the POC's to deal with web issues, within OERI to expand the capabilities of that unit, and also at the contractor's end.

Strategic Planning

The Department has made a good first effort at strategic planning regarding the website. The study team recommends that it continue to follow up on this planning, accessing the extent to which that first plan has been realized, developing better monitoring/oversight mechanisms, establishing performance measures and quality standards for web activities, and continuing the development of such plans and vision documents. However, as indicated earlier, staff with the time to do such planning are necessary. Priorities may also need to be clarified.

Relationship of OESE to www.ed.gov

OESE's relationship to the www.ed.gov management should be assessed to see if it is typical of other offices. Two concerns in the relationship are apparent. Staff in OESE could benefit from internet training which would enable them to be more self-sufficient in the web activities. This training might come under the auspices of the IWG or be provided via knowledgeable staff in various POC's or through the contractor. The other concern is the sense that OESE is not visible on the homepage. The upcoming redesign process might look into this concern further as it is one that is probably shared among the POC's.

CONCLUSIONS

The www.ed.gov website and its management demonstrate the commitment and interest of many individuals in the Department of Education. Unfortunately, these dedicated staff are on the verge of being overwhelmed by the amount of work the website requires. In this section, the team has highlighted a number of dimensions of that crisis. The most critical are the:

- Lack of adequate staff for various web activities throughout the Department
- Lack of resources.

These two key problems work to magnify several other problematic aspects of the management of the website including:

- Lack of agreement on purpose of the website
- An organizational structure that has several potential bottlenecks
- Lack of coordination of communication
- Lack of agreement on the purpose of the IWG
- The need for additional evaluation efforts and ability to integrate feedback on customers and their needs

The Department has a very successful website. Department officials will need to 1) invest new and significant resources and 2) reconsider the organization and responsibilities for key individuals who manage the website if it is to move to the next generation of websites.

III. POLICY ASSESSMENT

This section of the assessment had two major goals. The first goal was the identification and location of relevant Department of Education web policy documents. The second goal was the analysis of the identified documents, which included the following tasks:

- An internal analysis of the contents of the identified Department of Education web policy documents for the identification of ambiguities, contradictions, duplications, gaps, inconsistencies, enforcement mechanisms and modification mechanisms;
- An implementation analysis of selected Department of Education websites in order to determine the degree of compliance with the Department web policies;
- An external analysis of Department web policy/policy documents in comparison to the Federal Web Consortium Guidelines;
- A preliminary review of Department web policies in the broader Federal information policy setting – including a comparison of Department web policies to those at selected other agencies, and recognizing and integrating selected Federal policies into Department policies.

The combination of these analyses and reviews offers a broad view of the Department of Education's policy system related to website development and management. Two supplemental loose-leaf notebooks compiling (1) Department of Education web policies, and (2) web policies from selected other Federal agencies resulted from the policy assessment. These two notebooks will be provided to the Department for its review. It is important to note that the analyses reflect a particular moment in time for the web policies rather than illuminating the decisions that created them. Thus important contextual elements that impacted the policy development are not identified.

For the purpose of this section, the following terms are used. Web Policy is used here to refer to the overall web design and internal web management practices of a particular federal agency, and may encompass multiple web policy documents. Web Policy Document (WPD) is used here to refer to a specific document that is intended to govern some aspect of the web design and/or internal web management practices of a particular federal agency web site. This is in contrast to a general policy document that merely resides on the web. A web policy document may consist of one file or multiple files considered to function together as a single document.

WEB POLICY DOCUMENT IDENTIFICATION

Overview and Key Findings

The Department of Education has a fairly well developed set of policy documents. There is one primary agency-wide web policy document called *U.S. Department of Education World Wide Web Server Policy and Procedures* (http://inet.ed.gov/internal/wwwstds.html); all other agency-wide web policy documents are either implementations of policy (e.g. Disclaimer notices) or are derived from the primary WPD. The study team did not find any policies specific to individual Department office web sites, but did identify a few policies specific to sites lower in the organizational hierarchy (e.g. USNEI, NCES, etc.). Most of those policies are also based on the agency-wide policy.

Method

In a Federal agency that has created a web policy, there will most likely be a single conceptual document (which may consist of more than one file) that is considered to be the primary agency-wide web policy document (WPD). The first step in identifying and locating federal agency WPD's is to identify and locate this primary WPD. Once this primary WPD has been identified and located, then any additional agency-wide WPD's should be identified and located. Sub-agency or office WPD's can be identified and located by subsequently applying this methodology to that level. In addition to WPD's, general policy documents that may also relate to the web environment should be identified and located.

For this study of the Department of Education website, a knowledgeable staff member provided the URL for the primary WPD, informing the study team of both its existence and its location. Other methods for identifying and locating the primary WPD are also possible. The possible methods include:

- Via a link from the agency's home page
- Via information from knowledgeable staff, such as the webmaster
- Via the agency's search engine
- Via browsing
- Via an external web search engine
- Via a relevant publication
- Via a link from another web site or another web page

Once the primary WPD was identified and located, the study team began the process of locating additional relevant agency-wide WPD's. The team identified and located most of the additional agency-wide WPD's by browsing the Department's website. The team also identified and located a few additional WPD's by searching the Department's website.

Browsing

- Look for related documents located nearby (i.e. within the same hierarchy)
- browse in the hierarchy by using an "Up" button or by truncating the URL (see Figure III-1)

- Move sideways in the hierarchy (i.e. explore the links that are contained one level up from the primary WPD or another relevant WPD)
- Move down in the hierarchy (i.e. explore the links from the primary WPD or another relevant WPD to other documents nearby)
- Look for related documents located elsewhere (i.e. not hierarchically related)
- Explore the links from the primary WPD or another relevant WPD to other documents located elsewhere, as long as they are within the same Department/Agency/Office

Searching

- Use the agency's own search engine first, followed by an external web search engine
- Search using the URL of the primary WPD as the search term. In a number of cases, additional web policy documents will contain a link back to the primary WPD.
- Search next by using applicable search terms, such as:
    - web(site) policy guidelines
    - web(site) standards
    - web(site) guidelines
    - web(site) policy/policies
    - disclaimer
    - privacy

Figure III-1

Example of URL Truncation

http://www.ed.gov/internal/wwwstds.html

becomes

http://www.ed.gov/internal/

For this study, the study team identified the organization-specific and program-specific WPD's by searching the Department's website as indicated above. The study team identified the general policy documents that relate to the web environment by browsing as indicated above.

After the study team identified the web policy documents and general policy documents that relate to the web environment, the list of documents found, along with their URL's, was sent to the Department of Education. The Department was requested to verify that the list was complete and prioritize the documents on the list (See Figure III-2).

The methodology outlined above for web policy document identification is based on certain assumptions. First, it assumes that there is a primary agency-wide web policy document that exists in writing and is available online somewhere on the agency's website. Second, it assumes that similar documents will be located close to each other in the hierarchy. Third, it assumes that the indexing method used by the agency's search engine allows for retrieval of terms anywhere in the document, i.e. full-text indexing. Fourth, it assumes that keyword searching is available via the agency's search engine. The search terms provided above might, but will not necessarily, be found as phrases -- it should be possible to search for the presence of these terms in a document, no matter where they occur in relation to each other.

Findings

The list of the identified Department of Education web policy documents and general policy documents that relate to the web environment is included here as Figure III-2.

Figure III-2

List of Department of Education Web Policy Documents

A. Agency-wide web-specific policies.

Title: U.S Department of Education World Wide Web Server Policies and Procedures
URL: http://www.ed.gov/internal/wwwstds.html

Title: Guidelines for Reviewing ED Web Sites
URL: http://www.ed.gov/offices/OCIO/internet/inet7.html

Title: Review Checklist
URL: http://www.ed.gov/offices/OCIO/internet/inet8.html

Title: ITIRB Decision on Server Management
URL: http://www.ed.gov/offices/OCIO/it/it4.html

Title: Procedure: Request for New External Web Server/Site
URL: http://www.ed.gov/offices/OCIO/internet/inet3.html

Title: Establishing Links to External Organizations
URL: http://www.ed.gov/internal/xtrnlink.html

Title: Collection Scope and Criteria for Inclusion on Main ED Page of Links
URL: http://inet.ed.gov/EdRes/edrespol.html

Title: U.S. Department of Education -- Web Site Disclaimer of Endorsement
URL: http://www.ed.gov/disclaimers/endorse.html

Title: U.S. Department of Education -- Copyright Status Notice
URL: http://www.ed.gov/disclaimers/copyright.html

Title: U.S. Department of Education -- Web Site Privacy Security Notice
URL: http://www.ed.gov/disclaimers/privacy.html

Title: U.S. Department of Education – Disclaimer
URL: http://www.ed.gov/disclaimers/exit.html

Title: ED-WWW Server and Site Problems: Customer Support Process
URL: http://inet.ed.gov/internal/customer.html

Figure III-2 (continued)

List of Department of Education Web Policy Documents

B. Organization-specific and Program-specific web policies.

Title: USNEI Web Site Disclaimer and Policies
URL: http://www.ed.gov/NLE/USNEI/HP1C.html

Title: Web Site Disclaimer and Policies - Site Disclaimer
URL: http://www.ed.gov/NLE/USNEI/HP1C1.html

Title: Web Site Disclaimer and Policies - USNEI Site Use Agreement
URL: http://www.ed.gov/NLE/USNEI/HP1C2.html

Title: Web Site Disclaimer and Policies - USNEI Site Policy
URL: http://www.ed.gov/NLE/USNEI/HP1C3.html

Title: National Forum on Education Statistics -- Draft Forum Web Site Policies and Procedures
URL: http://nces.ed.gov/forum/websitepolicies.html

Title: Think College -- Terms and Conditions
URL: http://www.ed.gov/offices/OPE/thinkcollege/welcome/terms.html

Title: Principles of the HEP Web Site
URL: http://www.ed.gov/offices/OPE/OHEP/wwwplans.html

C. General policy documents that relate to the web environment

Title: Assistive Technology
URL: http://www.ed.gov/offices/OCIO/asstech/index.html

Title: Requirements for Accessible Software Design
URL: http://gcs.ed.gov/coninfo/clibrary/software.htm

Title: FOIA/Privacy Act/Information Collections
URL: http://www.ed.gov/offices/OCIO/infocoll/info1.html

Title: Information Collection Clearances
URL: http://www.ed.gov/offices/OCIO/infocoll/info2.html

Figure III-2 (continued)

List of Department of Education Web Policy Documents

Title: Guidance on Freedom of Information Act
URL: http://www.ed.gov/offices/OCIO/infocoll/info3.html

Title: Guidance on Privacy Act
URL: http://www.ed.gov/offices/OCIO/infocoll/info4.html

Title: Privacy Act Fact Sheet
URL: http://www.ed.gov/offices/OCIO/infocoll/pa.pdf

Title: Information Retention and Disposal
URL: http://www.ed.gov/offices/OCIO/infocoll/info5.html

Title: Memorandum on Disposition of Departmental Records
URL: http://www.ed.gov/offices/OCIO/infocoll/info15.html

Title: Information Technology Security Manual
URL: http://www.ed.gov/offices/OCIO/comps/sec.pdf

Title: Protecting the Privacy of Student Records
URL: http://nces.ed.gov/pubs97/p97527/ABTHEDOC.HTM

Issues and Options

When this study was initiated, it was unclear if the Department had a comprehensive list of the web policy and general policy documents related to their website since no list was provided to the study team. After the Department reviewed the initial list of identified documents, the Department verified that the list was complete. The study team subsequently found an additional web policy document for the HEP web site (*Principles of the HEP Web Site*, http://www.ed.gov/offices/OPE/OHEP/wwwplans.html). The fact that the Department verified the initial list as complete when it, in fact, was missing a web policy document may indicate that the Department of Education does not know the full extent of web policy documents that are available on its website.

One option would be to (1) create and maintain a complete list of such web policy documents and general policy documents that relate to the web environment, and (2) organize access to these policies in a more coherent and complete manner. The study team committed significant effort into compiling these policy documents. They have been printed off the websites and organized into a loose-leaf notebook which is provided to the Department as supplemental material.

Creation and maintenance of a comprehensive list raises another issue as to who will be responsible for creating such a list and who will be responsible for maintaining it. Additionally, procedures for maintaining such a list would be necessary. For the Department of Education, the list found here in Figure III-2 could be used as a starting point. Maintenance of the list could become a part of the regular web page review process, and could be worked into the Department's request form titled "Request to Post Files on ED WWW Site."

ANALYSIS OF WEB POLICY DOCUMENT CONTENTS

Overview of Key Findings

One of the key issues affecting policy construction in a general setting, in this case the federal government, is that policies are written for an audience which is not homogeneous and is in fact composed of several different stakeholder groups. Because of the heterogeneity of the stakeholder groups, there are different levels of understanding, of procedural matters or technical matters for instance, present in different groups. Composing policies which are understandable and salient to all audience members is difficult.

This consideration is not unique to the Department of Education's web policies, but it is manifested to a degree here. Writing policy, then, becomes a double-edge sword: if policies are written to become understandable to the members of the audience who have the least understanding of the policy subject matter and are prone to the least use of such policies in their daily work, members of the audience who use the policies on a regular basis may find the policies tedious, explaining to too great a degree that which is accepted as given knowledge or information.

Overall, the Department of Education's web policies are well-developed and cover a broad range of topics. Clearly, the Department has invested significant energy and thought in designing comprehensive web policies aimed at presenting the Department's web material in a uniform, logical manner.

Given this, and recognizing the challenges inherent to developing coherent agency-wide web policy, the following are key findings from this analysis of the Department of Education's web policies:

- In some instances, the Department's policies use terms that are ambiguous and which could be clarified by the addition of further definitions, guidelines, or examples.
- The various job titles, their specific duties, and how each title relates to the other may need to be much more specifically and explicitly delineated.
- There are not many areas in the policies which are inconsistent and even fewer which are contradictory.
- In very few instances in the policies were there explicit directives as to how any of the policy tenets would be enforced. The policies lack clear statements as to *how* the policies would be enforced, *by whom* the policies would be enforced, and what *sanctions* would result from non-compliance.
- For the most part the policies lacked explicit processes for the collection of user feedback, both inside and outside the Department, and lacked explicit processes for how the policies could be modified or eliminated based on such feedback.

These findings will be discussed in detail later and will be followed by the description of several options for addressing the issues contained in the findings.

Method

The Department of Education policies analyzed in this section were first identified by the study team and then reviewed by the Department (see Figure III-2). This list of web policies to be analyzed was reviewed by Department of Education officials prior to analysis by the study team. In the interest of maximizing available resources, the decision was made to limit this analysis to what is a subset of all world wide web policies promulgated by the Department. This subset includes the primary document *U.S. Department of Education World Wide Web Server Policy and Procedures* (http://www.ed.gov/internal/wwwstds.html) as well as further iterations of narrow and specific policies developed by the Department and the Offices of the Chief Financial and Chief Information Officer (OCF and CIO), including:

- ED-WWW Server and Site Problems Customer Support Process (http://inet.ed.gov/internal/customer.html)
- Establishing Links to External Organizations (http://www.ed.gov/internal/xtrnlink.html)
- Collection Scope and Criteria for Inclusion on Main ED Page of Links to Other Online Educational Resources (http://www.ed.gov/EdRes/edrespol.htm)
- Disclaimer of Endorsement (http://www.ed.gov/disclaimers/endorse.html)
- Copyright Status Notice (http://www.ed.gov/disclaimers/copyright.html)
- Privacy and Security Notice (http://www.ed.gov/disclaimers/privacy.html)

- http://inet.ed.gov/offices/OCIO/internet/inet1.html
- Guidelines for Reviewing ED Web Sites (http://inet.ed.gov/offices/OCIO/internet/inet7.html)
- Review Checklist (http://inet.ed.gov/offices/OCIO/internet/inet8.html)
- ED-WWW Server and Site Problems Customer Support Process (http://inet.ed.gov/offices/OCIO/internet/inet5.html)
- Procedure: Request for New External Web Server/Site (http://inet.ed.gov/offices/OCIO/internet/inet3.html)
- Form: Request for New External Web Server/Site (http://inet.ed.gov/offices/OCIO/internet/inet4.html)
- Decision Memo-Centralized Management of Web Servers (http://inet.ed.gov/offices/OCIO/it/it4.html)
- Exit Icon Disclaimer (http://www.ed.gov/offices/OCIO/exit.html)

A set of specific criteria for analyzing the policies was developed by the study team. This set of criteria provided a framework of analysis with which to examine the Department's policies. The criteria included the following topics to be used to analyze the policy documents:

- Ambiguities
- Contradictions
- Duplication
- Gaps
- Inconsistencies
- Enforcement
- Possibility for modification.

In order to be useful in the analysis, however, these topics first had to be operationalized; that is, specific questions had to be developed for each topic so that the analyst examining the policies would be able to identify particular aspects of each criteria when examining the policies. This operationalization was intended to make the analysis both more objective and reliable. Table III-1 contains the set of operationalized policy criteria.

TABLE III-1
Operationalized Policy Criteria

Ambiguity	• Can a reasonable outsider infer what the policy is (briefly summarize policy)? • Can the policy be interpreted in multiple ways (how)? • How long is the policy (paragraphs)? • Does the policy contain examples to minimize confusion (provide quotes)? • Does the policy cover one topic or multiple topics
Contradictions (black and white)	• Do policies appear in the same document which contradict this particular policy? • Do policies appear in the other policy documents which contradict this particular policy?
Duplication	• Does the same policy or wording appear more than once within the same document? • Does the same policy or wording appear in other policy documents?
Gaps	• Are there areas where additional guidance and detail is needed?
Inconsistencies (gray areas, not contradictory just differences)	• Are different directions given for policies within a document? • Are different directions given for this policy in other policy documents?
Enforcement	• Are there any explicit statements as to how the policy will be enforced? • Are there explicit statements as to who is to enforce these policies? • Are any sanctions for non-compliance made clear?
Possibility of modification	• Is there an explicit process for collecting user feedback (users outside the department) on the policy? • Is there an explicit process for collecting user feedback (users inside the department) on the policy? • Is there a process for modifying the policy? • Is there a process for eliminating the policy?

Using this set of operationalized policy criteria, the analyst examined the list of Department of Education policies listed above. This examination included reading the policies multiple times for better understanding, applying each operationalized policy criteria to each policy, and comparing the prescriptions contained in a particular policy to the others. The findings from this process are detailed in Appendix III-1.

Issues and Options

Despite the detailed analysis and suggestions presented in Appendix III-1, it must be reemphasized that the Department of Education has developed a set of well thought-out policies governing the ED server websites. The policies cover the spectrum of issues that are encountered in facilitating a web presence. A similarly well-developed set of web policies for another federal agency was not uncovered during this investigation.

Still, the Department may want to consider several issues highlighted by this analysis. While these issues may be addressed in any number of ways, several options can be considered.

What Are the Guidelines for Archiving or Removing Webpages from Department Servers?

Sections in the main policy document refer to the need to decide whether webpages containing out-of-date information should be removed entirely from the website or archived. Responsibility for making such a determination was left up to the parties responsible for the particular website by this policy. The issue of dealing with old webpages is an important one and should not be left up to each office or program to decide. The management of out-of-date information should be centralized and not allowed to fall where it will. The Department may want to consider several options in addressing this issue:

- Creating a set of specific guidelines to be used in determining what material should be archived and what material should be removed.
- Designating a centralized place to store all material needing to be archived.
- Designating a job title (or adding specific duties to an existing job title) to oversee the management of archived material.

An explicit policy on this issue would seem to better suit the overall purposes of the Department since it would add another centralized policy to the Department's growing arsenal.

Can the Department Create Better Policies and Buy-In From Employees by Facilitating User Feedback?

In the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, no explicit direction is given as to how the Department may go about soliciting and collecting feedback from: users of the Department's websites; and Departmental users of the web server policies. Creating specific processes for collecting and using user feedback may contribute positively to the future development of the overall web policies and websites. The Department may want to consider several options in addressing this issue:

- Creating a specific policy within the main policy document that prescribes how and when external user input should be collected.
- Creating a specific policy within the main policy document that prescribes a process for implementing user input.

Soliciting and utilizing internal user feedback regarding web policies could have the positive effect of creating internal user buy-in, facilitating not only more complete implementation and adherence to the web policies, but perhaps better future web policies. The same positive effects may also be gained by soliciting the input of external users.

From Where does the Authority for Education Office Web Policies Originate?

In several instances during this analysis, authority for policies promulgated by Department offices could not be directly identified in the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*. This situation does not readily support a Departmental goal of centralized policy. Policies promulgated by offices must find their authority from direction in the main document. The Department may want to consider:

- Reviewing existing Department office policies and identifying the specific places in the main policy document which authorize the development of such policies.
- Eliminating office policies that do not spring from the main policy document.
- Creating new directives within the main policy document to support office policies that are currently without direct authority.

If offices continue to develop policies that lack a basis for authority in the main policy document, the main document's strength will be undermined and the Department may find its web policies devolve toward decentralization.

Who is Responsible for Making Changes and Coordinating the Ongoing Review of the Department Websites?

While subsequent policy documents, *Guidelines for Reviewing ED Web Sites* and *Review Checklist*, address this issue, the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, contains no similar explicit statements of responsibility. This issue really sums up the lack of enforcement evidenced throughout the main document. The Department may want to consider promulgating additional policies to address this issue.

Such a policy might include clear statements as to:

- Who exactly is responsible for reviewing Department websites.
- How websites will be reviewed to ensure that they comply with the stated policies of the main policy document.
- How often such a review should occur.
- Who will be responsible for implementing recommended changes.
- Who will be responsible for following up to ensure that recommended changes were actually implemented.
- What are the sanctions for not implementing changes.

The tasks of implementing recommended changes to websites and following up to ensure that such implementation occurs is important. If changes are not implemented, policies may then exist with no enforcement and be rendered impotent. The Department needs to devise a mechanism to ensure that reviews that lead to implementation of proposed changes in order to conform to policy are occurring.

Has the Department Webmaster and the Webmaster Duties Been Designated as Clearly as Possible?

There was evidence throughout the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, that inconsistencies exist regarding the webmaster duties being shared by OCIO and OERI. Inconsistencies on paper often translate into confusion in action. It seems important to identify precisely who is ultimately responsible for overseeing the web development and management for the Department. The Department Webmaster should function to encourage unity among the many disparate websites administered by the Department. It seems unlikely that the most effective formulation of this role is created when the role is divided between two or more Department offices. The Department may want to consider several options regarding this issue:

- Eliminating inconsistencies in references within the main policy document to Department Webmaster duties.
- More clearly defining the exact duties of the Department Webmaster.
- Designating the Department Webmaster role within one Department office.

While the last option is the most dramatic and will require altering existing policy, the Department may find that positive results would accrue from taking this step. A clear centralization of authority may make possible better enforcement of web policies.

What are the Exact Duties of the Various Job Titles and How Does Each Relate to the Others?

There are a number of job titles that are directly affected by the Department's web policies. These include: Department Webmaster, Principal Office Assistant Secretary, POC Home Page Editor, and Web Publisher. Importantly, the duties listed for each of these job titles given in the main policy document are not complete lists and they are not very specific. Neither do the job title descriptions provide an understanding of how each job title really relates to the others in the sense of an organizational hierarchy. The Department may find that it is better able to implement its web policies by clarifying the duties and relationships contained in these job titles. Along this line of consideration, the Department may want to consider several options in addressing this issue:

- Precisely defining the job duties of each job title involved in web management and web development.
- Creating a detailed organizational diagram of the hierarchy of each job title to the others.
- Making explicit the relationship of each job title to the others. This would include delineating who is responsible to whom or defining which job title oversees the activities of other job titles.
- Including all of the above information in the main policy document.

Making more explicit these relationships should allow existing policies to be better implemented and enforced. Continued ambiguity on this issue will probably hold the Department back from implementing to the fullest extent its well thought-out policies.

IMPLEMENTATION ANALYSIS

Overview and Key Findings

Overall, most policies appear to be implemented successfully on the websites reviewed. Plain text equivalents to graphics are clearly evident throughout the entire site. The use of frames is rare on the sites reviewed, but where it does occur, text alternatives are also present (http://www.ed.gov/offices/OESE/SIP/programs/). The use of online forms is also rare on the sites reviewed, but alternatives are available where forms exist (http://www.ed.gov/comments/problemform/ProblemForm.html).

Additionally, the Department of Education is to be commended for the tremendous degree of cross-linking that is evident between web sites for different offices, organizations and programs. Responsibilities that are shared between offices result in cross-linking to existing program pages or documents rather than duplication. Cross-links of this kind are frequently seen in relation to the budget:

- The Office of Elementary and Secondary Education, and its component Compensatory Education Programs are responsible for administering Title I programs under the Improving America's Schools Act (IASA), but the Budget

- Service of the Office of the Under Secretary is responsible for managing the actual funds involved.
  - http://www.ed.gov/offices/OESE/program.html links to http://www.ed.gov/offices/OUS/title1.html
  - http://www.ed.gov/offices/OESE/CEP/info.html links to http://www.ed.gov/offices/OUS/us98.htm

Additionally, if a relevant document already exists elsewhere on the ED web site, it will be linked to rather than duplicated:

- *Budget News* at http://www.ed.gov/offices/OUS/budnews.html links to *Education Department Testimony before Congress on the FY 1999 Budget* at http://www.ed.gov/Speeches/99budtst.html.

The Department of Education has done an excellent job of leveraging the utility of the information resources they have placed online.

The study team did identify several problems:

- The cross-linking described above can cause navigational problems due to the presence of icons or text links that don't take you back to where you came from. Instead these icons take you to the logical home page for that cross-linked program, document or collection, and/or the ED home page. Experienced users might take note of this and are therefore less likely to get lost, but the average user could easily get lost among these cross-links.
  - The document *Education Department Testimony before Congress on the FY 1999 Budget* at http://www.ed.gov/Speeches/99budtst.html mentioned above links back to the main Department web site (http://www.ed.gov/index.html) and to the Speeches and Testimony directory kept there (http://www.ed.gov/Speeches/index.html), but does not include a link back to Budget News or any other page on the OUS site.
  - The *OLCA Home Page* (http://www.ed.gov/offices/OLCA/) includes an icon called "Budget" which links to The *Department of Education Budget* at http://www.ed.gov/offices/OUS/budget.html. The *Department of Education Budget* page in turn includes a link to OUS, but no link back to OLCA.
  - The *OLCA Home Page* (http://www.ed.gov/offices/OLCA/) also includes an icon called "Grants" which links to The *Grants and Contracts/Grants Redesign* at http://www.ed.gov/offices/OCFO/gcinfo.html. The *Grants and Contracts/Grants Redesign* page in turn includes a link to the main Department web site, but no link back to OLCA.
  - The *OLCA Home Page* (http://www.ed.gov/offices/OLCA/) includes another icon called "Student Aid" which links to the *OPE Home Page* at

http://www.ed.gov/offices/OPE/. The OPE home page does not include a link back to OLCA.

  - *US Department of Education FY 1999 Budget* (http://www.ed.gov/offices/OUS/Budget99/) includes a link to *President's State of the Union Address and Education Initiatives* at http://www.ed.gov/updates/inits98/. The document *President's State of the Union Address and Education Initiatives* includes a link back to the main Department home page, but does not have a link back to any page on the OUS site.

- The vast majority of web pages are longer than 1.5 screens, and many are longer than 10 screens without being broken into multiple files; documents that are broken into more than ten multiple files often do not include a downloadable PDF, Microsoft Word or ASCII text version. Examples include:

  - *Office of Elementary and Secondary Education: Programs & Funding Opportunities* at http://www.ed.gov/offices/OESE/program.html
  - *U.S. Department of Education/Office for Civil Rights: Publications And Products* at http://www.ed.gov/offices/OCR/ocrprod.html
  - *The Federal Budget Process and Its Implementation in the Department of Education* at http://www.ed.gov/offices/OUS/budpro2.html
  - *GUIDANCE ON STANDARDS ASSESSMENTS, AND ACCOUNTABILITY* at http://www.ed.gov/offices/OESE/StandardsAssessment/ has no downloadable version
  - *Collective Bargaining Agreement* at http://www.ed.gov/offices/OM/toc.html, contains 43 files but no downloadable version

- Links leading down in the hierarchy are generally fine, but there are a number of problems with links leading up in the hierarchy (in addition to the cross-linking problem noted above), such that links leading upward are either missing or made at the wrong level in the hierarchy:

  a) There is a general tendency among the sites reviewed for key personnel biographical pages to be linked only to the ED home page rather than to the respective office home pages. Examples include:

    - *Norma V. Cantu* at http://www.ed.gov/offices/OCR/cantu.html
    - *Scott S. Fleming* at http://www.ed.gov/offices/OLCA/fleming.html
    - *Marshall S. Smith* at http://www.ed.gov/offices/OUS/smith.html

  b) There is a tendency for online documents that appear to have counterparts on paper to not be linked back to the ED home page or any other page on the ED web site; included here are most noticeably legal documents, memorandums and letters and other such documents. Examples include:

- Two letters from the Office for Civil Rights dated July 23, 1998 at http://www.ed.gov/offices/OCR/bowlgrn.html
- *OM: Complaint and Motion* at http://www.ed.gov/offices/OM/complain.html and http://www.ed.gov/offices/OM/motion.html
- Letter from Leroy Rooker dated November 25, 1997 at http://www.ed.gov/offices/OM/hope.html
- Letter from Scott S. Fleming dated May 8, 1998 at http://www.ed.gov/offices/OLCA/eoz2.html
- *21st Century Community Learning Center- fact sheet* at http://www.ed.gov/offices/OLCA/21stfacts.htm

c) There is a general lack of compliance in older documents, especially the ones that appear to be nothing but ASCII text turned straight into HTML. Examples include (all from the Office of Civil Review):

- *U.S. Department of Education/Office for Civil Rights: Letter of Findings to University of California, Berkeley School of Law (09/25/92) and settlement agreement. Subject: Considerations for determining permissibility of affirmative action admissions program under Title VI of the Civil Rights Act of 1964. File Update: 09/22/97*at http://www.ed.gov/offices/OCR/ucberkle.html
- *U.S. Department of Education/Office for Civil Rights: Title VI of the Civil Rights Act of 1964; Final policy on race-targeted aid (02/23/94). Non-discrimination in Federally assisted programs. Replaces the proposed policy guidance dated December 10, 1992 and published in the Federal Register.* at http://www.ed.gov/offices/OCR/racetarg.html
- *U.S. Department of Education/Office for Civil Rights: Letter to College and University Counsel confirming policy guidance on race-targeted financial aid in light of Podberesky and Adarand decisions. (09/07/95). Title VI of the Civil Rights Act of 1964* at http://www.ed.gov/offices/OCR/podberes.html
- *U.S. Department of Education/Office for Civil Rights: Memorandum to UCLA. Subject: Title VI of the Civil Rights Act of 1964: Investigation of the UCLA undergraduate admissions program regarding discrimination against Asian American applicants to the College of Letters and Science (L & S) and the School of Engineering and Applied Science (SEAS).* at http://www.ed.gov/offices/OCR/ucla.html
- *U.S. Department of Education/Office for Civil Rights: Memorandum to College and University Counsel (6/30/96). Subject: Title VI of the Civil Rights Act of 1964: Consideration of race in making college and university admissions decisions and granting financial aid. File Update: 07/22/97* at http://www.ed.gov/offices/OCR/dearcol.html

- *U.S. Department of Education/Office for Civil Rights: Resolution Letter to the Washington Legal Foundation (02/21/97), and Florida Atlantic University Resolution Agreement . Subject: Race-based scholarship and compliance with the Title VI of the Civil Rights Act of 1964. File Update: 09/22/97* at http://www.ed.gov/offices/OCR/fau.html
- *U.S. Department of Education/Office of the Secretary: Dear Colleague Letter from the Secretary of Education Riley (03/19/97). Subject: California Civil Rights Initiative, Proposition 209, regarding the responsibilities of California's school districts and colleges under educational programs and civil rights laws administered by this Department. Title VI of the Civil Rights Act of 1964. Affirmative Action. File Update: 09/23/97* at http://www.ed.gov/offices/OCR/prop209.html
- *U.S. Department of Education/Office for Civil Rights: Memorandum to Honorable Rodney Ellis, Texas Senate (4/11/97). Subject: Title VI of the Civil Rights Act of 1964: Hopwood v. Texas* at http://www.ed.gov/offices/OCR/hopwood.html
- *U.S. Department of Education/Office for Civil Rights: Memorandum to the Oregon State System of Higher Education (07/03/97), and Resolution Agreement. Subject: Tuition Waver Program compliance with the Title VI of the Civil Rights Act of 1964. File Update: 09/22/97* at http://www.ed.gov/offices/OCR/oregon.html
- *1998 UNITED STATES DEPARTMENT OF EDUCATION U.S. ACCREDITED POSTSECONDARY MINORITY INSTITUTIONS (1)* at http://www.ed.gov/offices/OCR/minlist1998.html

- There is an inconsistency in compliance with the guideline that prescribes a link to the Adobe Acrobat Reader home page where PDF files are found.

  - Pages that comply include:

    - *Education Legislation* at http://www.ed.gov/offices/OLCA/legislation.html
    - *Family Policy Compliance Office* at http://www.ed.gov/offices/OM/fpco.html
    - *Weekly Job Vacancies* at http://www.ed.gov/offices/OM/jobweb.html

  - Pages that don't comply include:

    - *Comments requested on Draft Consolidated Performance Report Under OMB Review* at http://www.ed.gov/offices/OESE/webpara2.html
    - *OLCA Home Page* at http://www.ed.gov/offices/OLCA/
    - *Financial Aid Evaluation* at http://www.ed.gov/offices/OUS/eval/finaid.html

  - *Continuous Improvement Management Guide for 21st Century Schools* at http://www.ed.gov/offices/OUS/eval/21cent/21stc.html
  - *Goals 2000 Legislation and Related Items* at http://www.ed.gov/G2K/

- There is a general lack of compliance when it comes to external links and disclaimers. This may be due in part to the inconsistencies and contradictions relating to external links and disclaimers that are found in the primary WPD. Pages that include primarily external links but do not have disclaimers or explicit notices of the external links include:

  - *Office of Elementary and Secondary Education: Technical Assistance -- Hot Topics!* at http://www.ed.gov/offices/OESE/hot.html
  - *U.S. Department of Education/Office for Civil Rights: Related Links* at http://www.ed.gov/offices/OCR/links.html (this page includes a statement which could be viewed as a short disclaimer, but the word "Disclaimer" is not found anywhere).

- The online version of *U.S. Department of Education World Wide Web Server Policy and Procedures* available at http://inet.ed.gov/internal/wwwstds.html does not match the Microsoft Word, Adobe Acrobat or ASCII versions of the same document available for download at the same URL. The online version of the document, on the References page of the Technical Standards and Guidelines (http://inet.ed.gov/internal/wwwstds/references.html) includes no mention of the Bandwidth Conservation Society under the links shown for Design. The downloadable versions all include this reference to the Bandwidth Conservation Society. The online version and downloadable versions of the same document differ, but there is no way to determine which is more recent between them.

Appendix III-4 details findings and suggestions resulting from the implementation analysis.

Method

The web policy created by the Department of Education contains two major types of policies -- those that govern internal web management practices, and those that govern web design principles. The policies that govern internal web management practices typically are not reflected visibly in the web pages themselves, so the Implementation Analysis was limited to policies that govern web design principles.

In preparation for the Implementation Analysis, the team prepared an Implementation Review Checklist (See Appendix III-2). During a review of the primary WPD, statements that presented clear prescriptive directives were marked. Prescriptive statements tend to contain certain directive words such as *must (not), need (to)/needs (to),* *required, shall (not)/should (not), have to/ has to, will, avoid, make sure to*, etc. Not all such prescriptive statements were chosen.

Statements that were not chosen included a) statements that were inconsistent with other statements, b) statements that would require viewing the HTML code itself in order to verify compliance, c) statements that would require subjective judgments on the part of the analyst, d) statements where it was possible to verify compliance but was not possible to verify non-compliance (e.g. "When updating a page, make sure to update the last update date and initials of the individual performing the update which appear at the bottom of many pages.") and e) statements that were judged to require too much time for review (e.g. "no obvious spelling errors" -- the Doctor HTML utility found at http://www2.imagiware.com/RxHTML/ is able to check for spelling errors among other problems, but is limited to checking four pages per online session, so usage of this utility was dropped).

After the selection of prescriptive statements was complete, many were combined and summarized in order to simplify the list of statements. For example, rather than specifying which format should be present for online viewing, for offline display or print, or for offline analysis and manipulation, a single summarizing statement was created -- "File format matches the intended usage (used online, offline print or display, offline analysis or manipulation)." This is a summary statement suitable for reviewing purposes, but the detail is found elsewhere.

Some statements were changed from a form suitable for prescription to a form suitable for review (e.g. "Pages whose focus is linking to external sites *shall include or link to* the text of the standard Disclaimer of Endorsement statement ... and a statement of the scope of the collection of external links and the criteria for inclusion." becomes "Pages whose focus is linking to external sites *include or link to* 1) the text of the standard Disclaimer of Endorsement statement and 2) a statement of the scope of the collection of external links and the criteria for inclusion."). The simplified list of statements was compiled and statements were logically grouped together. The Implementation Review Checklist is attached as Appendix III-2.

The process of preparing the Implementation Review Checklist took considerable time because the Department's web policy is quite well developed, with many documents to review. This review and the review checklist are based solely on the *U.S. Department of Education World Wide Web Server Policy and Procedures* because this primary WPD was found to be the basis for or the source for the majority of the remaining web policy documents.

Once the Implementation Review Checklist was complete, five Department of Education offices were selected for review. The selection was based on the organizational chart found at http://www.ed.gov/people.html#org. A brief review of the organizational chart showed that there are five major organizational areas, including External Relations, Budget, Policy & Planning, Decision/Strategy Support, Operations, and Programs. The analyst initially chose to review one office from each organizational area, but this was problematic as no office web site was found for Decision/Strategy Support. Therefore, the team then chose to review two office web sites from the Programs area as this organizational area is an important one.

Offices chosen included the Office of Legislative and Congressional Affairs (to represent External Relations), the Office of the Under Secretary (to represent Budget, Policy & Planning), the Office of Management (to represent Operations), the Office of Elementary and Secondary Education and the Office for Civil Rights (both representing Programs). As the Office of Elementary and Secondary Education is mentioned elsewhere in this study, this office was a mandatory review rather than a choice. Pages chosen for review within each office were for the most part limited to those pages that were obviously hosted by that site as opposed to coming from some other site within ED or from other government sites (i.e. they shared the initial portion of the URL in common, such as http://www.ed.gov/offices/OESE). Exceptions to this general rule were made in order to review the home pages for sites at the Organization/Program level, and to explore certain cross-links.

In the initial stages of reviewing the various sites chosen, each analyst filled out a grid based on the Implementation Review Checklist for each web page viewed. A sample grid is attached as Appendix III-3. As the process of filling out these grids became very time consuming, the team soon began to review more quickly by making a bookmark for each page viewed and making notes of problems relating to the Implementation Review Checklist items that were encountered during the review.

The methodology outlined above for Implementation Analysis might vary when applied to other federal agencies because adjustments might be necessary if the web policy is either less developed or more developed than the web policy found at the Department of Education. The checklists developed for this analysis may be revised and updated by the Department for future use. Appendix III-4 presents details of the findings from the implementation analysis.

Issues and Options

The tremendous degree of cross-linking present on the Department's website is both a help and a hindrance when it comes to navigating back and forth between offices, organizations and programs. Options for solving this problem are as much philosophical and policy-driven as they are technical.

There are clearly a number of older documents on the Department's website that predate the Department's current web policy; many of these older documents do not comply with the current policy. The available web policy documents do not address the timing or procedure for getting these older web pages into compliance with the current policy. The Department needs to address this situation. Options for addressing this issue include:

- Providing a grandfather exclusion to previously existing pages so that they don't have to comply.
- Creating and publishing a timetable and procedure for getting the older pages into compliance -- this could perhaps be worked into the periodic reviews of the web site

Links that do or should go up in the hierarchy are problematic for a number of different reasons as explained previously in this section. Options for addressing these link problems include:

- Addressing the issue of older pages that predate the policy as stated above.
- Following the very good example set by the biographical page for *Patricia W. McNeil*, Assistant Secretary for Vocational and Adult Education (http://www.ed.gov/offices/OVAE/mcneil.html). This page links to both the main ED home page and the individual office home page.
- Incorporating this into the periodic review of web sites

The ED guidelines aren't consistently followed in terms of providing a link to the Adobe Acrobat reader where PDF files are found. Possible options for addressing this problem include:

- Adding a section about Adobe Acrobat to the Standard Footer so that the Adobe Acrobat reader will be linked by default.
- Following the elegant solution demonstrated by the U.S. Patent and Trademark Office, which has created a page called *Document Formats and Viewers* (http://www.uspto.gov/web/menu/viewers.html). This single page includes information on all proprietary document formats and links to readers where available. Should ED decide to follow the U.S. Patent and Trademark Office example, care must be taken to ensure that the page created is available as a link either from all web pages or from all web pages that include downloadable documents in proprietary formats.

The guidelines with regard to disclaimers are clearly not followed most of the time, perhaps due to the inconsistencies and contradictions present in the web policy. Options for addressing this situation include:

- Addressing the inconsistencies and contradictions found in the web policy – with clear guidelines to follow, more web pages should be in compliance.

- Following the very good example set by the Office of Hearings and Appeals (http://www.ed-oha.org/), a component of the Office of Management. The Office of Hearings and Appeals presents a Disclaimer link right from the home page.

The team found one instance where the online and downloadable versions of the same document are not identical. It is possible that there are other documents that also have this same problem. The Department's policy does not include a procedure for keeping online and downloadable versions of the same document in sync with each other. A procedure for keeping online and downloadable versions of the same document in synch with each other must be developed. One option might be:

- Include a section on the form *Request to Post Files on the ED-WWW Site* that could be used to indicate if a downloadable version is present and whether changes to it are needed.

These and other proposed options and suggestions should be considered as a means to simplify and better coordinate website policies as they affect various units across the Department.

COMPARISON OF DEPARTMENT OF EDUCATION POLICY GUIDELINES TO FEDERAL WEB CONSORTIUM GUIDELINES

This section compares the Department of Education web policies, World Wide Web Server and Procedures (www.ed.gov/internal/wwwstds.html) to The Federal Web Consortium guidelines (http://www.dtic.mil/staff/cthomps/guidelines/). The Consortium guidelines were originally based on the primary ED WPD (see article at http://www.ed.gov/pubs/OpenWindow/1997Fall/staff.html). Since they were first created, the Federal Web Consortium guidelines have undergone one revision, and a second revision is currently underway. This comparison is based on the draft version of the second revision.

Overview and Key Findings

The side-by-side analysis between Consortium guidelines and Department policies identified the following key findings:

- The Federal Web Consortium feels that web policy creation should involve more personnel than just the webmaster.

- The Federal Web Consortium Guidelines include a very useful checklist, inclusion of a similar checklist would add significantly to the utility of the Department's web policy. The checklist created by the Department's Internet Working Group is a step in the right direction.

- The Federal Web Consortium Guidelines show a greater sensitivity to users when they allow personal e-mail addresses to be used for contact where personal service is rendered.

- The Federal Web Consortium Guidelines state that Individual Home Pages are allowable if they meet certain criteria. While the Department's policy strictly prohibits Personal Home Pages, the Department's web site does include short biographical pages for key personnel. In this sense, Individual Home Pages aren't entirely forbidden by the Department.

- The Federal Web Consortium Guidelines provide additional information specifying in what manner external links can be made explicit. The Department's policy states that external links should be clearly identified, but does not indicate what form such identification should take.

- Both policies address Restricted Access, but the Federal Web Consortium Guidelines go much further in explaining when restricted access might be called for. The Federal Web Consortium Guidelines also address Records Management issues which the Department's policy does not.

- The major difference regarding Headers is that the Federal Guidelines specify that Headers and page titles (i.e. HTML page titles) should be the same. The Department's policy does not indicate anything of this nature.

- The Federal Web Consortium Guidelines address the Body of documents. The Department's policy does not include a similar section.

- The Department's policy indicates that initials with a mailto: link are appropriate for the Standard Footer, but the Federal Web Guidelines clearly state that a (visible) e-mail address should be present.

- The Department's policy indicates that documents greater than ten screens should be broken down into sections. The Federal Web Consortium Guidelines specify that documents longer than five pages should be broken down into sections. Clearly the Federal Web Consortium prefers documents that are shorter.

- The Federal Web Consortium Guidelines specifically address the issue of Cookies. The Department's policy addresses cookies in only a very minor way, and does not include any example notices, even though reference is made to such notices. It is also not clear at this time whether the Department's web site actually uses any cookies.

- The Federal Web Consortium Guidelines clearly place a much greater emphasis on collection of information from users.

- Both policies address copyright, but the Federal Web Consortium Guidelines address special issues with regard to copyright that arise in the digital environment – the Department includes no mention of such issues.

- Both policies also address Disclaimers, but there are a number of differences between the two policies. The Federal Web Consortium includes a *Disclaimer of Liability*, no such disclaimer is mentioned in the Department's policy. The Federal Web Guidelines include example disclaimer notices right in the policy document, but the Department's disclaimer notices are located elsewhere and merely linked to which may make it difficult for users to find. The Department's web policy documents were found to be inconsistent and contradictory with regard to the topic of Disclaimers.

- The Federal Web Consortium Guidelines include a mention of Electronic Public Disclosure – the Department's policy does not contain a similar section.

- Both policies address GILS, but the Department's GILS policy is rather vague. The Federal Web Consortium Guidelines clearly state that a GILS record should be created for each agency web site, but the Department's policy on GILS does not specify when GILS records should be created.

Overall, the Department of Education websites comply with the guidelines offered in the Federal Web Consortium Guidelines.

To a large degree, the Consortium Guidelines incorporated much directly from the Department of Education's policies. Some of the major differences between the Consortium Guidelines and the Department of Education policy are that the Consortium Guidelines suggest that the creation of web policies should include a broad range of individuals other than the agency webmaster; the Consortium Guidelines include a concise and useful checklist for reviewing sites and pages to insure their compliance with policy; the Consortium guidelines (in its Appendix C) may have a greater emphasis on security issues; and the Consortium Guidelines have greater discussion of cookies and collection of personal information and disclaimers than the Department's policy. The Department of Education's policy has better examples of how to choose which texts should be linked to other websites. Detailed discussion of the findings can be found in Appendix V-5.

Method

As the Federal Web Consortium Guidelines were originally based on the primary Department of Education web policy document (*U.S. Department of Education World Wide Web Server Policy and Procedures* at http://inet.ed.gov/internal/wwwstds.html), these two documents are fairly straight-forward to compare in a side-by-side manner.

While the actual structure and contents of each document are somewhat different, the headings and contents of the paragraphs in each section are similar enough to allow the analyst to match up the documents heading by heading. The study team used the side-by-side methodology. The team chose to limit the analysis to selected sections where the policies differed markedly.

The similarity between the Department of Education policy documents and the Federal Web Consortium Guidelines limits the usefulness of this methodology since much of the Consortium Guidelines came originally from those developed at the Department of Education. Thus, other Federal agencies will find this side by side analysis to be more useful than the Department of Education – since other agencies policies are not so closely linked to those developed by the Consortium. Detailed findings from the side by side analysis comparing Department of Education policy to Consortium guidelines appears in Appendix III-5.

Issues and Options

The third revision of the Federal Web Consortium guidelines will soon be released. A key issue, which related to findings from other analyses presented in this section, is the degree to which the Department of Education should revise, expand, update, and better organize their various web policies. Detailed suggestions for such a revision to improve Department web policies can be found in Appendix III-5 and other appendices to this section of the report.

Another issue and option related to the possibility of producing a single (or at least fewer) and better integrated set of Department web policy statements. One option for the Department of Education webmasters and/or the IWG is to review the newest Federal Web Consortium guidelines once they are released (the side by side used in this analysis is a November 1998 draft) and compare the content and organization to the Department's guidelines, updating and revising Department policies where appropriate.

DEPARTMENT WEB POLICIES IN THE BROADER FEDERAL INFORMATION POLICY SYSTEM

A final aspect of the policy analysis was a preliminary comparison of the existing web policy system at the Department to (1) other selected departments and agencies, and (2) government-wide information policies that may have an affect on web policy development at the Department. This section of the report is *not* comprehensive and intends only to identify selected policy issues from other Federal agencies and those that cut across all agencies as a *beginning point* for further discussions at the Department regarding web-policy development. Although this assessment was not part of the original statement of work, the study team believes that officials might find this discussion of interest for future web policy development activities at the Department of Education.

- *The Copyright Act* (17 *USC* 101) which provides certain protections for authors of literary and other types of work and sets the stage for determining intellectual property rights; it also allows government information to be free of copyright and encourages broad dissemination of government information.

- Executive Order 12862, *Setting Customer Service Standards* (September 11, 1993). This Executive Order (and follow-up memorandums, e.g. Memorandum for Heads of Executive Departments and Agencies on "Improving Customer Service" (March 23, 1995)) stresses the importance of developing customer service standards, benchmarking customer service standards, obtaining customer service data and assessments, and generally stressing the importance of "listening to the customer" as a means of developing and improving government services.

- *Government Performance and Results Act of 1993* (GPRA) (P.L. 103-62). This Act requires agencies to develop strategic plans with results-oriented objectives, performance measures and regularly report to Congress on their success in meeting the various performance measures. The Act is intended to improve Federal program effectiveness and improve public accountability by focusing on program results and customer satisfaction.

- *The Paperwork Reduction Act of 1995* (P.L. 104-13), and a range of Office of Management and Budget, Office of Information and Regulatory Affairs (OMB-OIRA) circulars and bulletins, e.g., Circular A-130, "The Management of Federal Information Resources;" these laws and the resulting policies describe how agencies are to manage information and otherwise make the information available to the public.

- *Information Technology Management Reform Act of 1996* (ITMRA) (P.L. 104-106). This Act repealed the Brooks Act (P.L. 89-306) and introduced sweeping changes to Federal IT management by establishing agency CIOs and calling for agencies to better manage IT by improving the efficiency and effectiveness of IT in a range of government operations.

- Executive Order 13011, *Federal Information Technology* (July 17, 1996). This Executive Order links the ITMRA, the PRA and the GPRA formalizes Office of Management and Budget (OMB) oversight of IT management and stresses the importance of performance-based planning and implementation of Federal IT.

- National Archives and Records Administration, GRS-20, Bulletin No. 98-02, *Disposition of Electronic Records*, and Electronic Records Working Group *Report to the Archivist of the United States* (September 14, 1998) (additional information and updates at www.nara.gov/records/grs20). Despite the ongoing litigation regarding the role of NARA in administering records management (including disposition and archiving, and preservation) agencies are required to schedule, archive, and dispose of electronic records – including information on websites.

This list is not intended to be comprehensive. Rather it suggests a beginning set of Federal policy instruments that have some bearing on the development and management of the websites at the Department.

Overview and Key Findings

The policy system that has been developed for the management and development of websites at the Department of Education is very good. There is a basic web policy instrument, *World Wide Web Server Policy and Procedures*, and there is a suite of office and other web policy instruments that expand upon the basic policy and apply those policies to individual Departmental offices. Existing policies incorporate or recognize government-wide web-related policies. No other agency web policy system identified and reviewed was as comprehensive and intelligible as that at the Department of Education. Only in the area of policy for ongoing evaluation and compliance with GPRA did the study team identify weaknesses. Within this context, the study team offers some suggestions and options to improve selected policy topics covered in the Department's web policy system.

Method

The study team compiled a set of (1) Federal agency web-related policy documents, and (2) selected Federal information policy instruments and guidelines with potential impact for web development and management. Members of the study team conducted a search through various agency websites in much the same manner that was used to identify Department of Education web policies (see discussion of this process earlier in this section). A limitation of this technique is that the compilation does not include agency web policy documents that may be in print format only and not posted to the website. The compilation of selected government-wide information policy that may be of interest for web development and management was based on the following criteria:

- Was the policy instrument intended for a government-wide audience and not targeted at individual agencies?
- Did the policy instrument mention web management/development directly or electronic information directly?

- Did the policy instrument have a direct impact on web management/development in terms of public access to or use of Federal information?

The study team organized the compilation of other agency web policies into a loose-leaf notebook that will be delivered as part of this project to the Project Liaison at the Department of Education as supplemental material to this report. Some considerable effort went into identifying and copying these web policies so that Department of Education officials might have an opportunity to know how other agencies are dealing with web policy issues.

Members of the study team reviewed the two compilations (the first of all identified Department of Education web policies, the second of other agency web policies) in conducting the analysis described in this section. In the case of the compilation of other agency web policies, the team attempted to answer these questions:

- How do the Department of Education web policies compare to others in term of length, scope, and completeness?
- To what degree have other agencies dealt with issues and topics related to web management and development similar to those addressed by the Department of Education?

Again, the study team cautions that the compilation of web policies is likely to be incomplete but that it does offer a useful listing and review of what other agencies are developing in the area of web policies.

Regarding the review of the selected Federal information policies related to web development and management, the study team sought to identify issues and topics for the Department of Education to consider as it continues to evolve and refine its websites. Once again the study team cautions that this compilation and review is also likely to be incomplete of all the appropriate policy instruments that *might be* considered as having potential impact on Federal agency web policy development. In addition to reviewing the various compilations of policy statements, findings in this section also draw upon interviews with staff during the two visits to the Department of Education (see Management Assessment section for details on method). Key policy questions addressed in those sessions include:

- To what degree do staff understand and are aware of various Federal information policies affecting Department website development and management?
- How do staff stay informed of information policy developments that might affect Department web policy development?
- What mechanisms are in place to update and modify existing Department web policies in light of government-wide policy development?

have a well-developed mission statement and objectives, i.e., www.ed.gov/offices/OPE/OHEP/wwwplans.html.

- There is some confusion and ambiguity as to policy development for agency use and development of the Internet, Intranets, the web, electronic mail and related information systems (e.g., the policy by the Social Security Administration). Often times it is unclear how these various mechanisms for managing information systems are to work together. To some degree policy development for websites should be integrated into policy related to other systems. But an issue is the degree to which such integration is feasible given the rapidly changing environment of the web and other information systems.

- The example web policies from other agencies have limited reference to or recognition of the broader policy instruments such as privacy, security, FOI, records management, GPRA, and others as listed earlier in this section. Using GPRA as an example (to be discussed below), there is little to no discussion in these policies of appropriate performance measures or other indicators of "success" for agency websites. Overall, there is much work yet to be accomplished in terms of integrating agency website policies with government-wide policies related to websites.

- Despite the often-times complex and detailed information about developing and managing agency websites, there is relatively little offered about the importance of and need for training related to website development. When training is mentioned in the web policies, the guidelines are generally in the form of that as given in the Defense Technical Information Center's policy, "DTIC staff are encouraged to obtain training and information necessary to implement their WWW projects."

- While such statements may offer encouragement, the experience of the study team is that most agencies are struggling with developing training programs to support the agency move to the web environment. Indeed, the Department of Education's current policy on training related to web development may need to be reconsidered. Interviews with Departmental staff indicated a great desire on the part of most staff for more and better training related to web development and management, but a number of problems with obtaining support for such training appear to exist.

A number of additional general findings related to ambiguous and unclear wording in the policies, confusion as to responsibilities for webmasters versus records managers, versus program officers, etc. can also be identified in these statements. But, the sample policies also offer some interesting approaches and ideas for policy development related to agency websites. For example the National Oceanic and Atmospheric Administration's (NOAA) "Report to the NOAA Deputy Under Secretary... on Internet Information Resources" raises a number of important issues. Officials at the Department of Education may wish to review these policies in the supplemental loose-leaf notebook for a better sense of what other agencies provide for website policy guidance.

Overall, the study team concludes that the Department of Education policy guidelines for web development and management are far superior to other agency website policies identified and reviewed. The U.S. Department of Education *World Wide Web Server Policy and Procedures* (WWWSPP) (March 1, 1998) www.ed.gov/internal/wwwstds.html is significantly more detailed, comprehensive, and intelligible than other policy guidelines identified from other agencies. The draft July 9, 1998 "Proposal: Using Technology to Help American Education Improve and Innovate – and Invent the Future" is an excellent strategic planning and think-piece about moving forward in the web and networked environment. In addition, the suite of related web policy guidelines developed at the Department of Education and compiled in the supplemental loose-leaf notebook extends and supports the basic policies well beyond that identified in other agencies. Thus, the identification of areas for web policy improvement discussed earlier in this section should be understood in the context of the general high quality of the Department's web policies – especially when compared to other Federal agencies.

Recognizing and Integrating Broader Government-wide Policies

An area that the Department of Education may wish to review is the degree to which existing Departmental web policies address the broader government-wide policies identified earlier in this section. Page 14 of the WWWSPP lists the various government-wide policies seen to be related to web development (which are quite similar to those listed earlier in this section. At issue is the degree to which specific content in these policy instruments should be better integrated into policy and procedures for web development and management at the Department of Education. This section identifies selected policy areas and discusses issues and possible options that the Department may wish to consider regarding the integration of those policy instruments into existing Departmental web policies and procedures.

In the area of security the Department of Education *Information Technology Security Manual* (no date, but included in the supplemental loose-leaf notebook) provides a good example of developing policy that recognizes and is well-integrated into government-wide policy. The manual (which is apparently under development and/or evolving) clearly identifies a range of security issues and topics and discusses how they will be handled at the Department of Education. Of interest is the degree to which these policy guidelines are also integrated into the WWWSPP and the other suite of other web policies throughout the Department. It is not clear if the POCs and others responsible for web development in their particular office are aware of this manual and how it relates to web development and management.

In the area of Privacy, Records Management, the *Paperwork Reduction Act*, and *Freedom of Information Act* (FOI), the OCIO website has developed a number of good links and well-organized information about how best to deal with policy and procedures in these areas. see www.ed.gov/offices/OCIO/infocoll/info1.html. From this page customers can learn more about policies, Department of Education contacts, and other information related to these topics. Staff at the Department of Education can also obtain information regarding procedures to follow related to implementing these policy areas from these pages. The study team also determined that a search on the terms "records management," "Freedom of Information," and "privacy" from the www.ed.gov homepage "search key" would have identified these policy pages at OCIO as well as other webpages.

But, for example, there are a number of excellent guides for how citizens might use the FOI and privacy acts. One such guide is *A Citizen's Guide on Using The Freedom of Information Act And The Privacy Act of 1974 to Request Government Records* (U.S. House of Representatives, Report 105-37). This guide provides specific instructions and example request letters and could be linked directly through the Thomas website at the Library of Congress or through other sources such as Electronic Privacy Information Center (EPIC) http://www.epic.org/open_gov/citizens_guide_97.html>. Another example are the links from the OCIO page to records management policy and procedures. There is no indication that the existing GRS 20 is currently "null and void" nor are there additional links to records management policy, procedures and other information at www.nara.gov/records/grs20. At issue is the degree to which the Department of Education wishes to provide additional detail and linked information about these government-wide policy areas – perhaps as much for Departmental staff as customers.

In the context of records management, it was not clear to the study team how items placed on Departmental websites were controlled. Policy for how long a document would remain on a website, under what conditions it would be removed, and how it could be determined when and for how long an item was on the website were not identified. During interviews and focus group sessions, there was some concern from participants as to the Department's ability to go back and produce an official record that appeared at some point in the past on a website but no longer was posted. There also appeared to be some issues related to having an electronic version of a particular document on a website that might vary in some way from an official print version, e.g., the electronic version being updated and the print version not being updated. As per requirements in the Federal Records Act (44 U.S.C. Chapters 29, 31, 33, 35) and for legal/evidentiary requirements, policy and procedures in this area should be reviewed by the Department.

In addressing these and related issues regarding electronic records management of Federal websites, Department officials may wish to refer to a recent report by McClure and Sprehe, *Analysis and Development of Model Quality Guidelines for Electronic Records Management on State and Federal Websites* (1998). Of special interest are the proposed guidelines in Chapter 6, http://istweb.syr.edu/~mcclure/nhprc/nhprc_title.html. These guidelines and suggestions may assist the Department better develop policy and procedures in this area.

The study team noticed that in the area of security and privacy there are few methods by which customers can submit information that is encrypted or otherwise "secured." While it may be that currently there are few services on the website that require such levels of security and privacy, such are likely to be needed in the future as the Department, and the government overall, move to providing a broad range of personal services that will require secure transfer of data, personal identification numbers, electronic signatures, etc. The Department may want to begin thinking about policy initiatives in these areas. Regarding privacy, Department officials should review an excellent set of principles and suggestions offered by General Services Administration (GSA) at http://www.itpolicy.gsa.gov/mke/fedwebm/privacy.htm for possible changes that might be made in the various privacy statements presented throughout the Department's websites.

The study team could not locate an electronic reading room for declassified documents on the Department of Education website as per instructions in the *Electronic Freedom of Information Act* (1996). Perhaps such a page is available on the website and it simply could not be identified by the study team, or perhaps there are no declassified documents to be posted on such a site. Nonetheless, Departmental officials may wish to review this issue. In addition, the study team did not assess the website in terms of Year 2000 (Y2K) compliance or policies related to Y2K as developed by the Department. If they have not already done so, Department of Education officials should also review the degree to which Y2K problems might affect the operation of the website as it approaches the millennium.

Another issue concerns the degree to which the other office homepages, such as the OESE page www.ed.gov/offices/OESE, should have links to basic policy guidelines regarding privacy, records management, FOI, etc. Currently, on the OESE homepage, there is no link or information about such topics. While it is understood that on the www.ed.gov homepage there is a link in the top right corner to "disclaimers and notices" which will lead to a privacy statement, generally it is difficult to find the Department's policy on privacy. Further, the privacy statement as a "Disclaimers and Notices" does not promote users' awareness of their rights related to privacy.

An option for the Department to consider is replacing the phase "Disclaimers and Notices" with a button labeled "Privacy and other Policies" on the main Ed homepage. That button could then provide a listing of the various policy documents and procedures available and provide links (e.g., to the OCIO page noted above). The Department might also have a similar button on all the office homepages for "Privacy and other Policies" linking back to that ED homepage content. Thought might be given to expanding the policy content here include statements which are now elsewhere (in the WWWSPP) on topics such as the use of "cookies," etc.

Current Awareness of Federal Policies that May Affect Web Development and Management

Although there are appropriate references to and integration of government-wide policies that affect website development and management at the Department, interviews with staff suggest that there is some lack of understanding of the importance, use, and application of these policies. The study team especially noticed limited understanding of electronic records management issues, scheduling and archiving electronic records, and the importance of being able to know exactly what information, resources, tools, etc. were on which website at what particular point in time. The study team also noted limited attention to GPRA requirements (see discussion below).

For example, the *World Web Web home Page Guidelines and Best Practices* (World Wide Web Consortium, November 1996) is currently under revision with a draft being circulated for review. Department of Education staff may wish to affect this policy development process by offering suggestions and comments. Some additional policy work is also under development in General Services Administration, one of which is draft policy related to Chargeback issues for shared Internet website operations (contact rich.kellet@gsa.gov). Also under development by the National Partnership for Reinventing Government is "GovWeb" which is intended to be a website of Federal websites.

Departmental officials may wish to consider having (1) some general training sessions for webmasters and the IWG on the importance and implementation of these policies, and/or (2) assign specific responsibilities to an individual or team to monitor Federal policies that may affect the website and determine the degree to which the Department is complying with these policies.

Policy for Ongoing Evaluation of the Website and GPRA Compliance

Regarding successful compliance with GPRA, the study team concludes that while some work has been accomplished regarding the development of performance measures for the website, additional development of measurable objectives, performance measures, and procedures for ongoing data collection, reporting and analysis is needed. The primary source for these objectives and performance measures appears to the *U.S. Department of Education Strategic Plan: 1998-2000* Objective 4.1 (although other objectives may bear indirectly on web management and development). Apparently, the Department of Education has (as of March 18, 1998) not submitted a performance plan as per GPRA requirements (http://ombwatch.org/www/ombw/gpra/gprasp.html).

Performance measures for website activities must stem from clearly stated goals and objectives. Such goals and objectives can be developed for both the main Departmental homepage as well as websites for individual offices. In thinking about categories or types of performance measures for the website, the following may be useful:

- **Extensiveness**. How much of what specific types of services the website provides (e.g., number of users accessing a Web page per week, number of remote dial-ins per week);
- **Efficiency**. The use of resources in providing or accessing networked information services (e.g., cost per session in providing access to web customers, or the average time required to make a correction or other type of change to a particular website);
- **Effectiveness**. How well the web information service met the objectives of the provider or the customer (e.g., success rate of identifying and accessing the information needed by the user);
- **Service quality**. How well a service or activity is provided by the website (e.g., percentage of transactions in which users acquire the information they need);
- **Impact**. How a service made a difference in some other activity or situation (e.g., the degree to which web customers enhanced their ability to teach a secondary class better);
- **Usefulness**. The degree to which the web services are useful or appropriate for specific types of customers (e.g., percentage of services of interest to different types of user audiences); and
- **Adoption**. The extent to which institutions such as schools or users integrate and adopt Department of Education resources or services into organizational or individual activities (e.g., answering reference questions at the school media library, generating lesson plans, or writing proposals).

These categories suggest a range of possible performance measures that can be developed for both the overall Department homepage as well as individual office websites. For a range of reasons, costs and benefits related to the Department's website are needed. For example, the National Science Foundation claims that they saved $750,000 in printing and mailing costs by posting its *Grant Proposal Guidelines* on their website (*Government Computer News*, October 26, 1998, p. 32).

Once performance measures for the website are identified and defined, it may be useful to develop quality standards for each of the measures. For example, the "performance indicator" for objective 4.1 (no. 1) in the *Strategic Plan* (p. 45) is:

> By 2001 at least 90% of customers, internal and external, will agree that ED products, services, and information, including those on the Department's website, are of high quality, timely, and accessible.

In fact, this "performance indicator" is a quality standard. The performance measure being used in this example is "user satisfaction." The *standard* that the Department has set as acceptable is 90% satisfaction with ED products, services, and information. But the proposed quality standard will be difficult to measure because, first, it really includes nine different measures:

- Product quality
- Product timeliness
- Product accessibility
- Service quality
- Service timeliness
- Service accessibility
- Information quality
- Information timeliness
- Information accessibility.

Second, it is unclear how each of these measures will be operationalized so that data can be collected to produce the measures. Third, it is not clear who has responsibility for the data collection and reporting.

The Department of Education may wish to consider how it might best improve its compliance with GPRA for its website. A process needs to be developed that 1) clarifies website goals and objectives for both the main homepage as well as individual offices; and identifies, defines, and operationalizes performance measures and quality standards for the website; 2) establishes a means to collect, analyze and report data to produce the performance measures; 3) determines the degree to which the quality standards are being met; and 4) then integrates these findings into an ongoing process to improve the overall quality of the Department's websites. Additional detail about how to develop and submit performance plans can be found in the Act itself (Sections 115 and 116).

Better use of existing log server data and perhaps other existing web-based data such as customer surveys may assist in developing this process. Existing contractors might be tasked specifically to produce the data needed for the performance measures and quality standards once these measures and standards are agreed upon. The IWG, the OCIO, or the Webmaster at OERI appear to be candidates to have formal responsibility for administering a process of ongoing evaluation. To some extent automated data collection that regularly collects information on web activities and use can be linked directly to producing the performance measures and quality standards. Regardless of the process chosen, the Department of Education needs to better develop and define an ongoing means to evaluate its website, inform webmasters and the IWG of the results of such an evaluation, and comply with requirements of GPRA.

OVERVIEW OF THE DEPARTMENT'S WEB POLICY SYSTEM

The Department of Education has a significant amount of web policies. Indeed, a next step for the Department to consider is to better organize, coordinate, and perhaps make more concise a single source where all website policies can be found. The study team invested considerable time identifying and locating the various web policies that have been developed (see Figure III-2 and supplemental loose-leaf notebooks). Coordinating these various policies may be difficult if they are all not easily identified, if they are not linked, or if they grow and evolve without central coordination and review.

The study team employed a number of different assessment techniques to evaluate the policy system currently directing website development and management at the Department of Education, these included:

- Identification and location of web policies
- Analysis of Department of Education Policies
- Analysis of the Implementation of Web Policies
- Comparison of Department of Education Web Policies to Guidelines Developed by the World Wide Web Consortium
- Review of Selected Web Policies by other Agencies
- Recognition and Integration of Selected Government-wide Policies into Department of Education Web Policies.

Overall, the study team finds that the Department of Education has developed an excellent policy basis for the management and operation of the Department's websites.

Policy development for electronic records management and ongoing web evaluation and compliance with GPRA requires additional attention. Additional attention might be given to simplifying, coordinating, and organizing the various policies into a more unified whole. Nonetheless, those individuals who have been developing the web policy system at the Department of Education should be congratulated for their work in this area. They should also be encouraged to continue to develop, coordinate, link and update these policies as outlined in the various recommendations throughout this section and detailed in the appendices.

IV: TRANSACTION LOG AND TECHNICAL ANALYSIS

OVERVIEW AND KEY FINDINGS

Technology that aids in the management of websites is changing very rapidly, making it difficult for website administrators to stay abreast. Two years ago, most organizations built websites largely to disseminate information. Traditional "webmasters" added HTML pages or edited existing pages within their site to add to the information content. Websites that began with ten, twenty, or even one hundred pages have grown exponentially, in some cases reaching several thousand pages. Today web administrators have more sophisticated jobs. In order to determine technological advancements, assess target audiences, and improve overall site quality, they must collect, analyze, store, and manage vast amounts of information collected about site usage.

Log file analysis and other related technical analyses provide a method for web administrators to collect, analyze, store and manage website usage data. The study team used log file analysis and several other related technical analyses as one of four assessment approaches for the evaluation of the Department website.

The study team undertook analysis of the Department of Education log files in order to answer the following questions:

- How many broken links exist within the Department website?
- To what degree do Department web pages meet effective HTML coding practices?
- To what degree do Department web pages follow effective design practices?
- What paths do users take through the first few layers of the website?
- What areas of the homepage do users most often select?
- To what degree do external search engines find and retrieve Department web pages?
- To what degree did users find links produced by Department's search engine relevant?
- Do current query forms support GET and POST query methods?
- How frequently are current log reports utilized?

Several key finding emerged from this transaction log and technical analysis:

- Broken links exist within the Department website.
- Coding of some pages could be improved.
- Department web pages have inconsistent design practices.
- Path analysis highlighted both popular and underused routes through the first several layers of the site.

- Users on the homepage most often select links on the vertical navigation bar or the Most Requested Items section. They do not select links from the horizontal navigation bar.
- Some external search engines do not effectively find and retrieve Department web pages.
- Study team could not determine to what extent users found links produced by the Department's search engine relevant due to current Department query practices.
- Some query forms can support the GET query method.
- Several methods exist for increasing the effectiveness of current log reports.

While the study team identified the problems above, it is important to note that the Department is, itself, making use of transaction log analysis software and has been involved in an ongoing process of monitoring the errors and resolving them as frequently as possible. The study team's findings suggest that these efforts should continue and be expanded.

This section continues by providing background about log file analysis and current Department log practices, reviewing the methodology which the study team employed, discussing the findings of the data collection and suggesting several options for improved website management.

BACKGROUND FOR LOG ANALYSIS

This section first provides an overview of log analysis followed by specific procedures used in the analysis, findings, and options. Some readers may be familiar with the information in the first subsection; the research team asks their indulgence.

Log analysis is a three-step process that involves the set-up, analysis, and interpretation of data. It is important for web administrators to:

1. Determine what information administrators want to log. Most will find that it is not necessary to log all information supported by today's web servers.

2. Develop or purchase the necessary software, capable of manipulating and presenting relevant information to web administrators. Appendix IV-1 is a current review of the latest log analysis software.

3. Analyze reports. Log analysis software is capable of producing lengthy reports with numerous charts and graphs. Running this software on a weekly or monthly basis is only half the task. Administrators must carefully analyze the information supplied and then take the necessary steps to continue managing their web pages and web server.

Log files are text files that can range in size from 1MB to 100s of MB, depending on the traffic at a given website and server configuration. In order to determine and report on the traffic that a website receives, it is important to understand the difference among some key log file terminology. There are significant differences between a ***hit*, *access*, *visit*, and *visitor***.

A ***hit*** is any file from a website that a user downloads. A hit can be a text document, image, movie, or a sound file. If a user downloads a web page that has six images on it, then he or she puts seven "hits" on the server (six images + one text file). The number of images on a website varies greatly, so this type of statistical reporting can be misleading.

An ***access***, sometimes called a page view, is an entire page downloaded by a user regardless of the number of elements on the page. If a user downloads a web page that has six images on it, the user puts one page access on the server.

A ***visit*** is a user session with a website, regardless of the number of pages or elements he or she viewed. If a user looked at sixteen pages and fifty-four graphics while at a website, that user put one visit on the web server. A visit is determined by a user's IP address, which can be misleading due to Internet Service Providers (ISPs and Firewalls or Proxy Servers). A visit becomes a different visit after 30 minutes of inactivity time. For example, a user with the IP address 129.230.33.90 was browsing the Department of Education website between the hours of 12:00 pm – 12:10 pm. At 12:15 pm this user goes to lunch, comes back at 1:10 pm, and continues to browse the Department of Education website. Because this user has been inactive for more then 30 minutes, the user's activity will be considered two visits.

A ***visitor*** is a unique IP address in the log over a given reporting period. In the above example, the same IP address accounted for two visits, but would only be considered a single visitor.

It is important to use log analysis software that has the capability to report all four of the above statistics.

Access log

Historically the access log is the most commonly analyzed log file and provides the greatest amount of server data, including the date, time, IP address (or domain name), and user action (i.e., document/images/homepage.gif). The following is an example line of text from an access log:

```
128.230.33.90 - - [25/Feb/1998:-2:38:09 -0400] “Get /library/index.html” 200 1872
```

From this line of code it is possible to analyze the following variables in the access log.

1. IP address or domain name of the user's system. In the above example, the user was browsing the web from the IP address 128.230.33.90 (headcase.syr.edu). It is important to note that ISPs dynamically assign IP addresses to their users, making it harder to differentiate between individual users.

2. Date and Time. In the above example, the user accessed the web page on February 25, 1998, at 2:38 AM and 09 seconds. By default the time is based on a 24-hour clock. The last part of the time stamp (-0400) specifies the offset from Greenwich Mean Time (GMT). This could be useful when trying to match up the log files from a large website with mirror sites in different time zones.

3. Item accessed. The word item can mean an image, movie, sound, HTML, or CGI file. The above example shows that *index.html* was the item accessed. It is also important to note that the full path name (from document root) is given to avoid confusion (i.e., there may be more then one file called *index.html* on the web server).

4. Status code. The status code tells if the user had a successful request or some sort of error. In the above example the 200 means that the user had a successful request. In general, a status code in the 200s indicates a successful download, a status code in the 300s indicates that the user was redirected to another page, and a status code in the 400s or 500s indicates that the user encountered some sort of error.

5. Bytes Transferred. In the above example, 1872 refers to the number of bytes transferred between the web server and the client computer.

It is possible to generate the following data from these variables:

1. The percentage of users accessing the website from a specific top-level domain (i.e., .com, .edu, .mil, .org, .net, .gov). This can then be broken down into the number of hits, accesses, or visits from specific sub-domains (e.g., *www.microsoft.com or www.syr.edu*).

2. The overall breakdown of hits, accesses, and visits.

3. The number of requests the web server receives during specific hours and days of the week. These statistics can be useful to network administrators who need to know the optimal time or day to perform server maintenance and/or system upgrades.

4. Most and least requested pages within the website. This can be useful to determine which parts of a website are successful and what pages may need further attention.

5. Entry and Exit pages. This can help a web administrator determine what pages users may be bookmaking (entry page) and what pages may need a redesign due to large file size, broken links, or sub-standard content (exit page).

6. Path analysis. This can show an Administrator what the most common path(s) users are taking through a website. This information can be useful in redesign and overall maintenance of a website.

7. Demographics. This can be used to indicate what country is accessing the website, even down to specific cities and states. It is important to note that this information is taken from the Internic's WHOIS database and can be misleading (e.g., all America Online users appear to come from Vienna, Virginia).

The information that can be generated from the access log provides a broad view of a web server's use and users. Analysis of this information enables server administrators to characterize their server's audience and usage patterns. It is important to point out, however, that pages may be cached on a client's machine, thus the log will under-represent some usage of the site.

Agent Log

The agent log provides data on a user's browser, version of browser, and operating system. Today web pages are designed with a specific technology (Java, ActiveX) and web browser in mind. With the ever-growing browser war between Netscape and Microsoft, it is important to know what browser and operating system users are accessing a website with so developers know how to best maintain their site. Following is a sample agent log entry:

```
Mozilla/4.04 (Win95: I)
```

Analysis of the agent log allows server administrators to determine the following:

1. Browser. The type of browser used to access a website is important since there are several different web browsers on the market today (i.e., Netscape Communicator, Microsoft Internet Explorer, LYNX). Each of these support different technologies and are programmed to view web pages differently.

2. Browser Version. Website developers need to know when it is time to begin using a new and innovative technology (JAVA, Shockwave). For example, earlier versions of Internet Explorer do not support many JavaScript functions.

3. Operating System. The type of computer and operating system users have can determine the way a website will look (i.e., Windows NT, Windows 95, MAC OS, or UNIX).

These analyses are essential for the design and maintenance of websites. Without this information, site administrators could design sites that require viewing capabilities that a vast majority of the site's users do not possess. At best, this leads to wasted effort by the server administrator. At worst, this can lead to improperly displayed web content, thus effectively rendering the site inaccessible to the user.

Referrer log

The referrer log indicates when one site on the web links to another site on the web. Each time a user clicks on a link from one site to another, a referral line is added to the log. A sample entry is as follows:

```
http://altavista.digital.com/cgi-bin/query?pg=q&what=web&kl=XX&q=Technology >
/tech/technology.html
```

In this example, a user searched for the term *technology* using Altavista's search engine, and Altavista is linking to a file named technology.html. Analysis of the referral log allows administrators to track the following:

1. Referral. If a user is on a site (i.e., *www.syr.edu*), and clicks on a link to another site (i.e., *www.lib.de.us/*), then the *www.lib.de.us* site will receive an entry in their referral log, showing that a user clicked from *syr.edu* to *lib.de.us*.

2. Linked Page. The referrer log also shows administrators the exact page that is being linked to. This information can prove to be important to website administrators when a site is undergoing a redesign.

Tracking and analyzing referral data is critical for alleviating incorrect links (error 404). For example, when the URL of a page within a site changed, the site administrator would notify all referrals of the change. Doing this will alleviate the problem of "Error 404 – File Not Found" messages.

Error log

All web users have encountered the message "Error 404 – File Not Found" while browsing the web. This message indicates that a particular page that the user was looking for does not exist. Every time this message appears for a user, it also is generating a line of code in a web server's error log.

```
[Mon Feb 16 18:25:04 1998] access to /da-srvcs.html failed for 128.230.33.134, reason:
File does not exist.
```

The error log contains the following data for analysis:

1. Error 404 – As shown in the above example, the error log tells a website administrator the date and time, IP address of the user's computer, page on which the error was received, and the type of error generated. These error messages are critical for website administrators to analyze, as they inform administrators of unavailable links within a site.

2. Stopped Transmission. Every time a user hits the stop button on a web browser, a stopped transmission error is generated in the error log. As in the error 404 message, the stopped transmission error tells a website administrator the time, IP address, specific page, and the error type. Analyzing this information can indicate pages that are too large (usually due to large graphics or slow CGI scripts).

The analysis of the error log can provide important server information to the website administrator. This information can make it easier for site administrators to modify and correct web content, thus decreasing the number of errors users encounter while navigating a site.

Log File Formats

The most popular web servers today run on a UNIX or Windows NT server (mainly due to their security). The majority of web servers use the same standard when tracking log files, the W3C standard. The W3C standard delimitates fields within the log files by spaces so that the order in which the log file information tracked is standardized. However, within the W3C most web servers support two standard log formats.

1. Common Log Format. This format uses four log files (access, agent, referrer, and error) to track user information. Although all web servers are capable of tracking the four log files, some are set up by default to only track one or two (usually the access and error).

2. Extended Log Format (also referred to as the flexible log format). The extended log format combines all log information into one file. Using this format allows website administrators to track all possible information about a single user. Most web server's today are capable of tracking log files in the extended log format; however, a site administrator may need to change the necessary configuration files.

Department of Education Web Server Logs

The Department of Education has several web servers within the *ed.gov* domain. On a typical day *www.ed.gov* collects nearly 100 MB worth of log files. Due to the size of the log files, the study team received one week of log files (dated September 20 – September 26, 1998) from *www.ed.gov*. In addition, the team collected one week of log files from *search.ed.gov* files (dated September 20 – September 26, 1998), and two weeks of log files that were specific to OESE (dated September 13 – September 26, 1998). The Department uses the Netscape Enterprise 3.5.1 web server for its main website.

The web server is configured to use the extended (or flexible) log file format, which combines access, agent, and referral data into one log file (the error data is contained within a separate file). Search.ed.gov is using an UltraSeek search engine, which generates two sets of log files. Although there are standard log files that are collected for search.ed.gov, there are also separate log files that are created which are specific to a user's search. For this analysis, study team collected the W3C standard log files.

The Department of Education uses WebTrends log analysis software to regularly run detailed reports for offices within the Department of Education and an overall report for the entire *ed.gov* domain. Reports are distributed on a monthly basis. The current month's statistics are cumulated daily. The WebTrends reports can be found at: *http://www.ed.gov/internal/webstats/*

METHOD

The study team formulated these questions after consultation with Keith Stubbs. Stubbs requested that the study team concentrate on an advanced as the Department was already running some basic reports on a regular basis. This section continues by describing the testing environment and by explaining how the study team gathered data about each of these questions.

Test Environment

On September 25, 1998, the study team set-up an FTP account for the Department of Education on a UNIX server located at Syracuse University. Katherine Forte then FTP'd over approximately 15 compressed log files. Between September 20-26 1998, study team collected approximately 800 MB of log data from the Department of Education. Team members then uncompressed and transferred the log files to the test system. The system consisted of a Pentium II, 300 MHz Microsoft Windows NT Server with 256 MB of RAM, and installed with Microsoft SQL Server 6.5, WebTrends Enterprise Edition 2.1, and Microsoft Site Server 3.0 Commerce edition.

Questions Addressed

Each question addressed by the log analysis used different techniques. These techniques are outlined below by question.

How many broken links exist within the Department website?

The study team ran a standard Site Server report that showed any broken link within the Department website. Broken links consist of web links that do not work, and result in a 404 "file not found" user error. It is important to note that 404 messages may occur for several reasons: links that do not work, mistyped URL's, and URL's that are incorrect on remote sites linking to www.ed.gov. The Department can work to minimize 404 messages due to missing files but may not be able to reduce the number of these messages to zero given the other causes of 404 messages.

To what degree do Department web pages meet effective HTML coding practices?

The study team created a custom filter to search for excessive image size. The team defined excessive image size as any image over 70 Kb. After identifying these images, the team tested how many large images stemmed from improper height and width attributes within the HTML <img> tag. Proper height and width attributes within an HTML file should match the actual height and width of the image.

To what degree do Department web pages follow effective design practices?

The study team created custom filters to search for excessive image size and excessive HTML page size. The team defined excessive image size as any image over 70 Kb and excessive HTML page size as any web page (excluding images) exceeding 70 Kb.

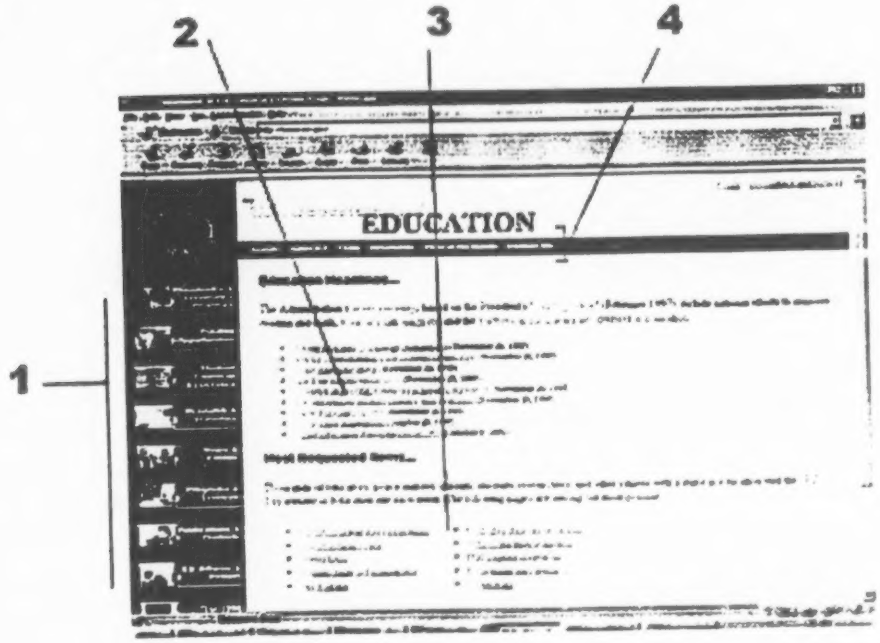
What paths do users take through the first few layers of the website?

Using Microsoft Site Server, the study team created custom reports that detailed paths that users took through the Department of Education website. Site Server contains a built-in path report, which reports the top five user paths. Because of the large number of links on the Department homepage, the study team felt it necessary to collect data on the top *ten* user paths. The research team created a custom filter within Site Server to accomplish this.

What areas of the homepage do users most often select?

The study team mapped the URLs given in the above described user path report to physical locations on the Department web page. The study team broke the Department homepage into four major areas, illustrated in Figure IV-1

Figure IV-1: Department Homepage Key Link Areas



1: Left-hand navigation bar
2: Education Headlines links
3: Most Requested Items links
4: Horizontal navigation bar

The research team wanted to determine what areas of the homepage users most often selected.

To what degree do external search engines find and retrieve Department web pages?

The study team experimented with three separate search engines in order to assess the direct accessibility of Department resources from external sources. The study team chose two external search engines known for their specialization in locating federal government information: Pathway Indexer and GovBot. In addition, the study team used AltaVista, a popular, commercial search engine.

Pathway Indexer	http://gather.access.gpo.gov/Harvest/brokers/Pathway/
GovBot	http://ciir2.cs.umass.edu/Govbot/
AltaVista	http://www.altavista.com

A study team member browsed the Department website and selected ten words or phrases reflecting actual content on the site. The investigators entered each term or phrase into each search engine. These terms were: National Center for Education

BEST COPY AVAILABLE

Statistics, ERIC digests, Education headlines, Education, Department of Education, Education reform, Goals 2000, Adult education, Educational resources, and Digest of Education Statistics. The investigators examined the degree to which the query results included Department of Education links. The investigators defined successful searches as those that produced a Department of Education link within the first page of query results.

It is important to note that each search engine lists a different number of query results on its first page. GovBot and AltaVista list 10 links per query results page. Pathway Indexer however, lists all relevant links on its query results page. Therefore, the Pathway Indexer had a greater chance of success than the other two search engines.

There are other strategies that might be employed to explore the question of effective retrieval including use of the reports produced by WebTrends on referring sites. Due to the limited scope of this project, those reports and other techniques could not be employed.

To what degree did users find links produced by Department's search engine relevant?

The study team analyzed a random sample of users drawn from one week of log data from the search engine log. The study team wanted to determine how many pages of search results the average user went through before choosing a link (there are ten results per page).

In order to obtain a random sample, the study team split the 130,000 line search log into130 mini log files, each containing 1000 lines. The study team took the first IP address found within the log file and counted the number of search result pages the IP address browsed through, prior to link selection. Departmental usage of the POST query method limited the study team' ability to determine what query terms users searched. Therefore, the study team will not present findings at this time.

Do current query forms support GET and POST query methods?

Staff working for Keith Stubbs gave the study team telnet access to the Department of Education search engine server in order to conduct several interactive live tests. Study team members wanted to determine to what extent the Department website could support the GET query method. The study team created two identical forms, one that used the GET query method, and the other that used the POST query method. The investigator entered the term "drug programs" into both forms and ran each query. The researcher captured the results in text file for later analysis.

How frequently are current log reports utilized?

The study team wished to determine to what extent the Department of Education made use of currently existing log reports. To do this, the study team requested that members of Keith Stubbs staff run a report about current log report usage. The report shows all accesses to the Department of Education October WebTrends reports from November 1 – 15, 1998. The study team counted the number of unique Department of Education IP addresses that accessed the files in this period.

FINDINGS

WebTrends Reports

The Department of Education uses the commercial software WebTrends to run detailed log reports. WebTrends is an excellent application for parsing through large amounts of log data. The WebTrends reports indicate an active site with over 3.5 million accesses per month, nearly 1 million of which constituted separate visits. However, such a large site is not without its problems. The following subsections discuss several key findings.

How many broken links exist within the Department website?

There are thousands of instances in which the Department of Education website is linking to unavailable resources, also known as 404 errors. The longer a website exists and the larger (in number of pages) a website grows, the more susceptible it becomes to 404 errors. Over time, web pages are redesigned, causing path or file names to change, or pages to be deleted. These factors lead to links becoming unavailable to users.

The Department of Education website contains three types of 404 errors:

- Internal – Where the Department of Education is linking to an unavailable resource within the main *ed.gov* web server.
- Different Internal Server – Where the Department of Education is linking to an unavailable resource outside of the main *ed.gov* web server.
- External – Where the Department of Education is linking to an unavailable resource on a server outside of its domain.

The Department monitors 404 errors on a somewhat regular basis and makes efforts to correct these problems through fixing URL's, page redirects, and emailing other sites that use incorrect URL's. According to Keith Stubbs, the number of 404 errors dropped 25% from September 1998 to October 1998 despite a rise in page views.

Table IV-1, IV-2, and IV-3 provide examples of the three types of 404 errors that a user may encounter while on the Department site. These are exclusive of 404 errors a user may receive because he or she mistyped a URL or a remote site not under ED control provided an incorrect URL. There are three columns to each table below. The first column identifies the URL that is unavailable. The second column shows all pages from within the *ed.gov* website that are attempting to link to the unavailable resource. The third column shows the hypertext link that a user would see on the page pointing to the unavailable resource. These examples do not represent all 404 errors on the site, but give a flavor of them.

Table IV-1: Internal errors within www.ed.gov

Unavailable URL	Link to URL	*Hyperlink Text*
1. http://www.ed.gov/MailingLists/EDInfo/0129.html	http://www.ed.gov/faqs.html	EDInfo Information Service Listserv
	http://www.ed.gov/tfaqs.html	EDInfo Information Service Listserv
2. http://www.ed.gov/Search/	http://www.ed.gov/pubs/EDInitiatives/98/98-02-20.html	http://www.ed.gov/Search/
	http://www.ed.gov/PressReleases/02-1998/redesign.html	http://www.ed.gov/Search/
	http://www.ed.gov/MailingLists/EDInfo/msg00338.html	http://www.ed.gov/Search/
	http://www.ed.gov/MailingLists/EDInfo/msg00334.html	http://www.ed.gov/Search/
	http://www.ed.gov/offices/OCIO/welcome/twel26.html	http://www.ed.gov/Search/
3. http://www.ed.gov/pubs/PFIE/employ/sld030.html	http://www.ed.gov/pubs/PFIE/employ/index.html	The Promise Fulfilled
	http://www.ed.gov/pubs/PFIE/employ/sld001.html	Last Button
	All the slides in this presentation	Last Button

Table IV-2: Internal errors within different ed.gov servers

Unavailable URL	*Link to URL*	*Hyperlink Text*
1. http://easi.ed.gov/html/faqs.html	http://www.ed.gov/faqs.html	Project EASI
	http://www.ed.gov/tfaqs.html	Project EASI
2. http://ocfo.ed.gov/grntinfo/reen.htm	http://www.ed.gov/tfunding.html	Discretionary Grants Redesign
3. http://nces.ed.gov/ncesNewPubs.html	http://www.ed.gov/pubs/EDInitiatives/96/09-20.html	http://nces.ed.gov/ncesNewPubs.html
	http://www.ed.gov/pubs/EDInitiatives/96/07-09.html	(http://nces.ed.gov/ncesNewPubs.html)
	http://www.ed.gov/pubs/EDInitiatives/96/07-17.html	(http://nces.ed.gov/ncesNewPubs.html)
	http://www.ed.gov/pubs/EDInitiatives/96/07-31.html	(http://nces.ed.gov/ncesNewPubs.html)
	http://www.ed.gov/MailingLists/EDInfo/msg00172.html	http://www.ed.gov/NCES/ncesNewPubs.html
	http://www.ed.gov/MailingLists/EDInfo/msg00149.html	http://www.ed.gov/NCES/ncesNewPubs.html
	http://www.ed.gov/MailingLists/EDInfo/msg00146.html	http://www.ed.gov/NCES/ncesNewPubs.html
	http://www.ed.gov/MailingLists/EDInfo/msg00142.html	http://www.ed.gov/NCES/ncesNewPubs.html

Table IV-3: External errors to www.ed.gov

Unavailable URL	*Link to URL*	*Hyperlink Text*
1. http://www.itpolicy.gsa.gov/mks/yr2000/cio.htm	http://www.ed.gov/offices/OCIO/year/	Y2K memoranda and progress reports
	http://www.ed.gov/offices/OCIO/year/ty2k1.html	Y2K memoranda and progress reports
2. http://www.ohioschoolnet.k12.oh.us/404.asp	http://www.ed.gov/Technology/sta_tech.html	Ohio State Department of Education
3. http://coe.ohio-state.edu/cete/ericacve/	http://www.ed.gov/bulletin/fallwin1996/eric.html	http://coe.ohio-state.edu/cete/ericacve/
	http://www.ed.gov/offices/OVAE/daelnews/summer97.html	ERIC Clearinghouse on Vocational and Adult Education
	http://www.ed.gov/offices/OVAE/daelnews/10-96.html	http://coe.ohio-state.edu/cete/ericacve/

To what degree do Department web pages meet effective HTML coding practices?

There are approximately 40 pages in which the Department is using incorrect height and width attributes of the HTML <img> tag. Although 40 pages within the extensive Department site may sound insignificant, the web industry standard is zero.

Within HTML it is easy to falsify the height and width of images to make them appear smaller (or larger) to users. An image height and width may appear to be small within a web browser, yet the full image (in bytes) must be download before a user can view it in its false dimensions. Over a high-speed Internet connection, a user may not realize that the pages in Table IV-4 take a long time to download. Viewing the pages in Table IV-4 over a modem can take several minutes due to the immense images that web browsers download.

To test the images, use Netscape Navigator to load any of the page locations listed in Table IV-4. When the page loads, right-click the image and select "View Image." The View Image function will display the image in its true height and width. In examples three, four, and five in Table IV-4 all three images are being loaded within the same HTML page (*http://www.ed.gov/Technology/challenge/prior.html*). The entire page size is over 640 Kb: ten times the size of an average web page.

Table IV-4: Large images with false height and width attributes

Page Location	*Image Name*	*HTML height and width*	*Actual height and width*	*Image Size*
1. http://www.ed.gov/offices/OPE/DirectLoan/newsletter/jul98/serving.html	group.gif	height=200 width=290	height=502 width=732	339 Kb
2. http://www.ed.gov/offices/OPE/DirectLoan/newsletter/jul98/	diane.gif	height=200 width=290	height=509 width=741	331 Kb
3. http://www.ed.gov/Technology/challenge/prior.html	97cover.gif	height=150 width=200	height=520 width=681	174 Kb
4. http://www.ed.gov/Technology/challenge/prior.html	96cover.gif	height=150 width=200	height=633 width=629	175 Kb
5. http://www.ed.gov/Technology/challenge/prior.html	95cover.gif	height=150 width=200	height=520 width=811	291 Kb

To what degree do Department web pages follow effective design practices?

PAGES WITH EXCESSIVELY LARGE IMAGES

The Department has several large images (measured in bytes) within its website. The web industry standard for average web page size, including graphics, is under 60 Kb (See http://www.intuitive.com/articles/design-guide.html where it is stated that users with 14.4 modems can receive no more than 45 Kb of data in 30 seconds).

Table IV-5 presents example page locations where the Department has notably large images; each individual image exceeds 90 Kb. Table IV-5 provides the examples in decreasing order by file size.

Table IV-5: Pages with excessively large images

Page Location	Image Name	Image Size
1. http://www.ed.gov/offices/OPE/Professionals/SAR/sar13.html	sar13.gif	121 Kb
2. http://www.ed.gov/offices/OPE/Professionals/SAR/sar5.html	sar5.gif	103 Kb
3. http://www.ed.gov/pubs/SER/ProfEd/figurej3.html	figurej3.gif	102 Kb
4. http://www.ed.gov/offices/OUS/eval/21cent/improve/sld030.html	img030.gif	99 Kb
5. http://www.ed.gov/pubs/FaultLine/cover.html	cover.gif	94 Kb

The web page labeled number 1 in Table IV-5 shows a scanned "instruction and code" notice that is difficult to read, and exceeds web industry standards. Web page number 2 in Table IV-5 shows a scanned "information review" form. The form could be considered of no value because it is difficult to read and prints illegibly. Web page displays a hierarchical diagram for southern Maine. Once again it is clear that this is a scanned image which is excessively large and difficult to read. Web page 4 is part of a slide show. The creator of this HTML page altered the height and width to skew the image. At just under 100 Kb this image loads slowly over a modem. Web page 5 is part of a different slide show. At first glance the 94 Kb image appears small in physical dimension, yet it downloads slowly. After importing this image into Adobe PhotoShop 5.0, the study team found that the image had been saved as a maximum quality JPEG. Maximum quality JPEGs are most often used for print media, and not for a web environment. As a test, the study team saved the image as a medium quality progressive JPEG that reduced the image size to 35 Kb.

PAGES WITH EXCESSIVE HTML TEXT

One hundred pages on the Department of Education website exceed 70 Kb. The average HTML text file size (excluding images) does not exceed 10 Kb. Table IV-6 provides five examples of Department HTML text file far beyond the 10 Kb average. Table IV-6 provides the examples in decreasing order by file size.

Table IV-6: Pages with excessive HTML text

Page Location	Page Size
1. http://www.ed.gov/offices/OSERS/RSA/RehabAct.html	**513 Kb**
2. http://www.ed.gov/legislation/FedRegister/finrule/1997-1/021197a.html	412 Kb
3. http://www.ed.gov/legislation/FedRegister/proprule/1995-4/index.html	361 Kb
4. http://www.ed.gov/offices/OERI/BlueRibbonSchools/arc5.html	171 Kb
5. http://www.ed.gov/offices/OIIA/Recognition/scholartable.html	108 Kb

It is important to note that some of these represent pages where the content has been drawn verbatim from another source and thus may be difficult for the Department to modify (for example, numbers 1 and 2 above come directly from the Federal Register).

What paths do users take through the first few layers of the website?

Path analysis provides a decidedly different performance measure than traditional counts of hits, page views, and visits. Whereas any page on the Department site could be the most popular or most visited (through bookmarks, external search engines, etc.), path analysis allows web administrators to see how users interact with the site. Path analysis of the Department site is important due to the number of pages the site contains. Analysis of a user's path involves sequencing the document requests and analyzing the path created. "Path" is roughly synonymous with "page view," the distinction here being that paths involve the further dimension of a chronological order.

A "first request" is the page that a user initially visits upon connecting to the *ed.gov* domain. The most common first request is *www.ed.gov/index.html*, the Department homepage. Table IV-7 shows the top five first requests for September 20 – 26, 1998.

Table IV-7: Five most frequent first requests

www.ed.gov/
/offices/OPE/Students/
/prog_info/SFA/StudentGuide/
/free/
/offices/OPE/express.html

The top five first requests (Table IV-7) were then matched with their top ten "second requests." For example, Table IV-8 shows the top ten second requests for */offices/OPE/express.html*, which was the fifth most common first request.

Table IV-8: First request with its most frequent second requests

First Request
/offices/OPE/express.html
Second Requests
/offices/OPE/Students/apply/fexpress.html
/PDFDocs/98fafsafinal/form.pdf
/offices/OPE/Students/
/PDFDocs/98fafsafinal/inst.pdf
/offices/OPE/express.html
/
/offices/OPE/Students/student.html
/offices/OPE/Students/apply/dwnload98-9.html
/offices/OPE/
/prog_info/SFA/StudentGuide/

Site Server then reported the top ten "third requests" for each second request. Table IV-9 shows the top ten third requests for one example of a second request (*/PDFDocs/98fafsafinal/form.pdf*).

Table IV-9: First and second requests with their most frequent third requests

First Request
/offices/OPE/express.html
Second Request
/PDFDocs/98fafsafinal/form.pdf
Third Requests
/PDFDocs/98fafsafinal/inst.pdf
/PDFDocs/98fafsafinal/form.pdf
/offices/OPE/Students/
/offices/OPE/Students/apply/fexpress.html
/offices/OPE/express.html
/offices/OPE/Students/apply.html
/offices/OPE/Students/student.html
/
/BASISDB/TITLE4/search/sf
/DirectLoan/consolid.html

Appendix IV-2 contains the complete path analysis that the research team compiled for the week September 20 – September 26, 1998.

What areas of the homepage do users most often select?

The Department has over 40 links on its homepage, several of which are less frequently utilized than others are. Web industry standards state that more than eight navigational choices can confuse users. Choice and placement of links should be based on user path analysis.

Table IV-10 reveals where users are clicking once they have arrived at the Depart-ment homepage.

Table IV-10: Top ten second requests from www.ed.gov

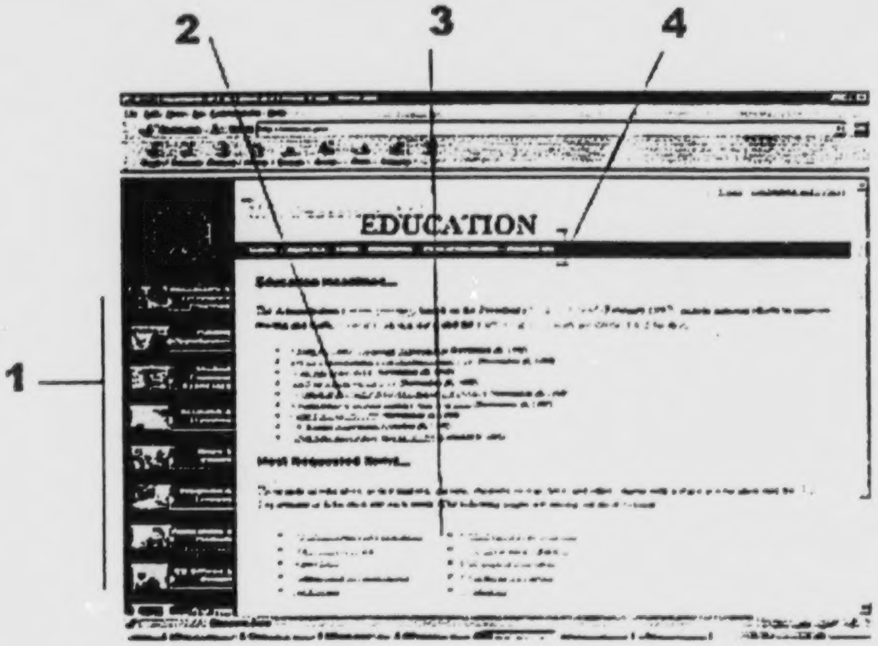
Second Requests		*# of accesses*
1	/	6,640
2	/stats.html	941
3	/finaid.html	798
4	/funding.html	745
5	/databases/ERIC_Digests/index/	611
6	/EdRes/	611
7	/programs.html	605
8	/free/	557
9	/pubs/	550
10	/pubs/EDInitiatives/98/98-09-11.html	534
	Total	12,592

(It should be noted that the top second request is the main page itself. This is a result of browsers requesting *www.ed.gov*, and the Department web server automatically redirecting users to *www.ed.gov/index.html*.)

When analyzing choices users make from the Department homepage, it is necessary to consider the physical layout of the homepage. Figure IV-2 shows the Department homepage and the four key clusters of links:

1: Left-hand navigation bar
2: Education Headlines links
3: Most Requested Items links
4: Horizontal navigation bar

Figure IV-2: Department homepage four link areas



Returning to the analysis of requests from the homepage (Table IV-10), certain trends emerge. Six of the top ten requests are located on the homepage left-hand navigation bar (1). One of the top requests is located in Education Headlines (2). Two of the top requests are located in Most Requested Items (3). None of the requests in Table IV-10 are associated with the horizontal navigation bar (4). Please note that requests to *search.ed.gov* from the horizontal navigation bar could not be determined in this study. This type of analysis would require cross-referencing of log files.

Analysis of the requests in Table IV-10 indicates that users are primarily relying on the vertical left-hand navigation bar (1 in Figure IV-2) to maneuver themselves through the Department website. The transaction logs show that most other links on the Department homepage are being used rarely.

To what degree do some external search engines find and retrieve Department web pages?

Teachers, students, and others seeking educational material may use external search engines to locate related websites. Department pages were generally underrepresented in the three external search engines tested. Teachers, students, and others seeking educational material currently can not easily discover the wealth of Department resources available. Results of the external search engine trial (Table IV-11) imply that those looking for educational information may often bypass the Department website altogether. Considering the reliable, high-quality information available via the

BEST COPY AVAILABLE

Department website, it is unfortunate that the public does not have multiple access points to this information.

Table IV-11: External search engine results

	Pathway Indexer	*GOVBOT*	*AltaVista*
	Number of ed.gov results (out of first 10) – total number of results		
Query terms			
National Center for Education Statistics	0 – 4	4 – 11685	3 – 11303
ERIC digests	1 – 9	10 – 5955	6 – 3346
Education headlines	0 – 25	0 – 5431	0 – 2331010
Education	1 – 37	0 – 3003	0 – 24983357
Department of Education	0 – 25	0 – 5957	0 – 199313
Education reform	0 – 25	1 – 5962	1 – 27928
Goals 2000	0 – 27	9 – 5878	1 – 12608
Adult education	0 – 26	0 – 5748	0 – 88873
Educational resources	0 – 27	0 – 10	0 – 82324
Digest of Education Statistics	0 – 1	4 – 8874	10 – 2310

Do current query forms support GET and POST query methods?

GET and POST are the two methods used to query search engines. The GET method appends the search query to a browser's URL, allowing users to bookmark their search results. The GET method has technical limitations placed on the allowable number of characters it can process. The POST request does not have any technical limitations on string length, but prevents users from bookmarking their search results.

The study team intended to analyze the keywords that users searched for within the Department of Education search engine. After analyzing a few lines of the search engine log file, the study team realized that the Department uses POST rather than the GET method to query its search engine. Upon the study team's request, Keith Stubbs, in an email message dated November 7, 1998, detailed the reasoning behind the Department choice of query method. Stubbs explained the "Cross-Site Index" service offered by the Department of Education, which allows users to search several databases with one query. The GET method (which is used by the majority of commercial search engines) has a query string length limit that would be exceeded by many "Cross-Site" queries.

There are pages within the Department website that allow the user to query the internal search engine, but do not include the "Cross-Site Index" option (e.g., *http://search.ed.gov*).

The study team created an HTML form using the GET method (Appendix IV-3), but not allowing the "Cross-Site-Index" option. Using the new HTML form, the team performed several queries, and successfully retrieved search results (Appendix IV-4). For comparison, the study team repeated the same test using an almost identical HTML form, using the POST method (Appendix IV-5). Upon analysis, the study team achieved identical search results (Appendix IV-6). Ultimately the study team bookmarked and later returned to the search results created by the GET request. The study team could neither bookmark nor return to the search results created by the POST request.

How can the Department increase the effectiveness of current log reports?

WebTrends reports are being run regularly within the Department of Education, however it does not appear that much action is being taken based on the results of these reports. The study team found only eight unique Department IP addresses to the October WebTrends report between November 1 – 15, 1998. OESE reports were viewed only twice, both external IP addresses. Such low usage of the October WebTrends report suggests that offices within the Department of Education may be overlooking the importance and usefulness of these reports.

ISSUES AND OPTIONS

The findings suggest a variety of options by which the Department can improve or enhance the www.ed.gov website. These options are presented below.

Options

How many broken links exist within the Department website?

The Department keeps archives of numerous text documents dating back several years (e.g., *http://www.ed.gov/PressReleases/*). Storing archives is certainly a laudable service for users, however it is also a common place to find broken links. The study team suggests using site management software (e.g., Site Server) to help site administrators continue to find and fix these broken links.

Users who follow internal broken links (Table IV-1) within the Department website (or users who enter an incorrect URL) will receive the Department "Error 404" HTML page (e.g., *http://www.ed.gov/abcdefg*). The Error 404 page is a single page within all websites that administrators should customize.

Users who encounter the Error 404 page should not feel they have done anything wrong. The traditional Error 404 page, which is large, bold black text, makes a user feel as if they have made a mistake (e.g., the message: "File Not Found"). Unless a user types in a URL incorrectly, the majority of 404 errors are the fault of the website, not the user.

The study team suggests that the Department consider redesigning its Error 404 page. While the Department Error 404 page is certainly better than most on the web, there is room for improvement. The redesigned Error 404 page should look similar to all other pages within the Department site. Navigation should remain on the left, a banner on the top, and an explanation detailing the error that has occurred. High-quality Error 404 pages begin their explanation with the words "We're sorry." Two examples of excellent Error 404 pages are ZDNET (*www.zdnet.com/abcdefg*) and CMP (*www.cmpnet.com/abcdefg*).

To what degree do Department web pages meet effective HTML coding practices?

The Department has a vast number of web pages that contain Javascript and other advanced technologies, which the study team was happy to see. The department also archives pages dating back several years, which raises some concern. The rapid change in HTML and Web technology means that pages coded two years ago may not be up to par today. While the study team found that most of the recent Department pages are properly coded, pages dating back to 1995 could use some revision.

The study suggests that the Department put a team in place that is responsible for updating web pages prior to 1997. This evaluation might include a review of the code for completion and adherence to standards for proper coding.

To what degree do Department web pages follow effective design practices?

PAGES WITH EXCESSIVELY LARGE IMAGES

The Department scanned several forms and published them on its website. These forms are difficult to read, and large in bytes (e.g., http://www.ed.gov/offices */OPE/Professionals/SAR/sar5.html*). The study team recommends that the Department recreate the scanned forms in HTML. The new forms will improve site design, and create increased interaction with the website.

The Department has made efforts to improve forms on their website by providing them in Portable Document Format (PDF). PDF furnishes a viable alternative to HTML forms, but does not allow user interaction with the website. The study team found several instances where forms were available in both PDF and HTML formats. The Department uses this practice inconsistently throughout its site. The study team recommends the consistent implementation for forms provided on the Department website.

The Department also has scanned graphs and diagrams available on its site (e.g., *http://www.ed.gov/pubs/SER/ProfEd/figurej3.html*). The study team recommends that the Department consider enhancing such images using a graphics program, such as Adobe PhotoShop. The Department may reconsider publishing any image that remains illegible after scanning and enhancement.

In addition to scanned images, Department web page developers may wish to exploit the compression differences between GIF and JPEG image formats. The two image formats offer substantial differences in terms of bit depth and quality. As discussed in item five, Table IV-5, using the appropriate image compression can drastically reduce image file size.

PAGES WITH EXCESSIVE HTML TEXT

The Department website has HTML documents with large amounts of text (see Table IV-6). These documents, which in some cases exceed 100 printed pages, take a long time to download over low bandwidth media. The study team recommends that the Department make long documents consistently available in both PDF and HTML formats. In addition, indicative file size information should accompany links to large documents. Such practice better prepares users for the files they wish to download.

As an alternative option, the Department may break up long HTML documents into several smaller HTML documents. For example, item four in Table IV-6 shows a long list of schools listed alphabetically by territory. The Department currently groups several territories into one HTML document. In this example, the Department may choose to create separate HTML documents for each territory, which will greatly reduce file size.

The Department might also review its current practice of providing copies of Federal Register files unedited. This may be difficult given the "near-legal" status of some of the documents however, their excessive size is problematic for users.

What paths do users take through the first few layers of the website?

As explained earlier, path analysis can help web administrators sequence the documents users request and analyze the path created. The study team recommends that the Department use software, such as Site Server, to create path analysis reports. (While WebTrends can produce some reports, it appears to be unable to process log files of the size generated by the site.) The Department may then analyze these reports to determine popular and/or problematic user paths. The Department could also assess the ease with which users find particular items.

What areas of the homepage do users most often select?

The Department should consider the critical importance of the most common requests from its homepage. This information may assist web administrators to adjust content and link positioning to reflect user needs. Web administrators should also examine the least popular links to determine if the links serve user needs or go unnoticed. For instance, section V of this study suggests that users need finding aids to help them locate information on the site. However, findings from this section of the report show that few users take advantage of the A-Z link. This suggests that users may overlook the current finding aids available on the horizontal navigation bar.

The study team recommends the Department move finding aids to a more frequently accessed section of the homepage. For example, the Department may wish to create a "search button" within the vertical (left-hand) navigation bar. The search button could link to multiple finding aids, including the Department search page, A-Z index, Cross-Site Search, programs and services listing, FAQ's, and organizational charts. These redesign efforts should be followed by usability tests.

To what degree do external search engines find and retrieve Department web pages?

As findings show, the three external search engines tested do not frequently retrieve Department web pages. Findings of the external search engine tests may result from the lack of META tags in Department web pages. Search engines rely in part on web page META tags to build their index. The Department greatly increases the ability of search engines to index its pages with the simple addition of carefully chosen META tags. The study team recommends that the two types of META tags, "description" and "keywords" would ideally be incorporated in all HTML pages.

Do current query forms support GET and POST query methods?

Based on the findings above, the study team recommends that the Department utilize both the GET and POST query methods. While the cross-site index must utilize the POST query method, all other entries to the search engine should utilize the GET method. Using the GET method will allow web administrators to better analyze users search requests, and allow users to bookmark their search results.

How can the Department increase the effectiveness of current log reports?

As stated above, the Department currently publishes WebTrends reports on a monthly basis. Many large Websites run and analyze log reports on a daily basis due to the incredible amount of data. The study team recommends the Department run log reports on a weekly basis in order to ease analysis.

Log analysis reports contain vast amounts of information, and can very easily be over 100 pages long. Experts in log analysis could hold training workshops to teach individual offices how to read and interpret a WebTrends report, and how to analyze and act on the reported information. Furthermore, individuals responsible for running reports should maintain regular communication (e.g., monthly reminder email messages) with offices regarding the reports.

Relational Database

Although the Department currently uses WebTrends, it does not store its log files in a relational database. Using a relational database (such as Microsoft SQL or Oracle) to store log data would allow the Department to generate reports showing longitudinal trends (e.g., visits, paths through site, etc.). In addition, a relational database would allow the Department to compare log files from different servers, or compare log data to existing databases that the Department may have.

Management Software

The study team recommends that the Department invest in software similar to Microsoft Site Server due to its ability to handle the size of the log files and produce reports in addition to those produced by WebTrends.

OESE FINDINGS

Method

The OESE log file analysis used the same methodology as described earlier in the section. In addition, the study team performed "referral analysis" using WebTrends and Marketwave Hitlist software. The referral analysis shows external sites that link to the OESE website.

Findings

How many broken links exist within the OESE website?

Many examples of broken links exist within the OESE website. This section details examples of the three types of 404 errors that users may encounter. Refer to the main report for further information about these errors.

Table IV-12: Internal errors within www.ed.gov/offices/OESE/

Unavailable URL	*Links to URL*	*Hyperlink Text*
1. http://www.ed.gov/offices/OESE/news_archive/contact.html	http://www.ed.gov/offices/OESE/news_archive/1-97.html	Contact us
2. http://www.ed.gov/offices/OESE/CEP/happening.html	http://www.ed.gov/offices/OESE/CEP/may22.html	Happenings
	http://www.ed.gov/offices/OESE/CEP/may15.html	Happenings
3. http://www.ed.gov/legislation/GOALS2000/The Act/intro.html	http://www.ed.gov/offices/OESE/leg_reg.html	Goals 2000

Table IV-13: Internal errors within www.ed.gov outside of OESE/

Unavailable URL	*Links to URL*	*Hyperlink Text*
1. http://www.ed.gov/legislation/GOALS2000/The Act/intro.html	http://www.ed.gov/offices/OESE/leg_reg.html	Goals 2000
2. http://www.ed.gov/offices/legislation/FedRegister/announcements/1996-4/122796a.html	http://www.ed.gov/offices/OESE/news_archive/2-97.html	Applications
3. http://www.ed.gov/legislation/ESEA/disadvan/times495.html"	http://www.ed.gov/offices/OESE/MEP/PrelimGuide/brochure.html	Office of Elementary and Secondary Education (OESE)

Table IV-14: External errors from www.ed.gov

Unavailable URL	*Link to URL*	*Hyperlink Text*
1. http://www.neca.org/funds	http://www.ed.gov/offices/OESE/hot.html	National Exchange Carrier Association has forms and instructions for applying for the e-rate.
2. http://www.nwrel.org/national/regional-labs.html	http://www.ed.gov/offices/OESE/MEP/PrelimGuide/appendix.html	Regional Education Laboratories (Labs)
3. http://www.enc.org/consortia.html	http://www.ed.gov/offices/OESE/MEP/PrelimGuide/appendix.html	Eisenhower Regional Mathematics and Science Education Consortia

Altogether, there were over 20 unavailable resources within OESE. This number includes HTML pages and images. Appendix IV-7 is a complete listing of unavailable resources found within OESE.

To what degree do Department web pages follow effective design practices?

Compression differences exist between GIF and JPEG image formats. (See earlier section for more information.) OESE web designers sometimes have used maximum quality GIFs (8 bit), when they could have used medium quality JPEGs to reduce file size. One such example is an image named "mural.gif" which is located on the Safe & Drug Free Schools Program web page (*http://www.ed.gov/offices/OESE/SDFS/*). This image is nearly 58 Kb saved as an 8 bit GIF, when saved as a medium quality progressive JPEG the file size can be reduced to 44 Kb.

Positioning of Pages

WebTrends reports show that the Safe & Drug Free Schools (SDFS) Program web page has been the most popular page within OESE for the last three months. What is somewhat unusual is that this web page is more popular then the OESE homepage itself. Users may have a difficult time finding the SDFS program page from the OESE homepage. Users must click on three text links before arriving at this page. Reports show that most users going to the SDFS homepage find it through external search engines and other websites, and not through OESE. Please note that OESE is one of the few offices which use web page META tags.

After analyzing the WebTrends reports, study team found that the (SDFS) homepage is also the number one page where users exit OESE. The study team assumes that OESE did not design the SDFS page as an exit page. The investigators found that the overall size of the SDFS homepage is almost 70 Kb, which is not enormous, but is pushing file size limits for modem users. This suggests that users cancel their requests due to the size of the file. An analysis of error logs (not undertaken in this report) could confirm this.

Referral Analysis

Referrals (or links from other Websites) are the primary method for users to find a website. Common referrals come from internal web pages, external search engine queries (e.g., *http://www.altavista.com*), or links from other websites. OESE received over 20,000 referrals in the month of September. More than half of OESE referrals came from pages within the Department of Education website (e.g., *http://www.ed.gov/gen_ed_org/program.html*), while over 600 came from Yahoo! (*http://www.yahoo.com*). Between the dates of September 20 and September 26, 1998 OESE received 200 referrals from *www.suck.com*.

Suck.com is published by Wired magazine and criticizes current events. On September 22, 1998, *suck.com* wrote an article on "The Safe and Drug-Free Schools and Communities Act." Within this article, *suck.com* links to the SDFS homepage. The publication generated a lot of traffic during that week. Appendix IV-8 provides a complete copy of the article.

How can OESE increase the effectiveness of current log reports?

OESE receives over 40,000 page requests a month, and the average visitor is spending over 16 minutes traversing the OESE website. Current OESE WebTrends reports (*http://www.ed.gov/internal/webstats*) contain detailed information about the OESE user base that OESE staff could analyze on a monthly basis.

OESE Recommendations

How many broken links exist within the OESE website?

OESE should consider running error-checking software (e.g., Site Server) on a monthly basis. Running error-checking software will help find and eliminate any broken links (or broken images) within the OESE website.

To what degree do Department web pages follow effective design practices?

OESE may want to reevaluate the navigation within its website. The log reports will help show the most popular pages within the OESE website (e.g., SDFS). OESE may want to promote programs such as SDFS by creating links in the top level (or second level) of its website. OESE should also consider testing all web pages over a 33.6 modem (the bandwidth of the average web user), to determine download speeds.

Referral Analysis

OESE can not prevent websites such as *suck.com* from linking to the site in a negative way. Regular analysis of the OESE log reports however, would inform it of such negative publicity. OESE would see the referrals coming to the site and be able to trace the offending link. Had OESE known about *suck.com* and its negative referral, OESE could have written an article in response, defending the program and its work.

CONCLUSION

The changes in the web industry over the past year show that effective management of websites requires not only the use of log analysis software, but also a complete web management application (including analysis software, a database, etc.). The Department use of WebTrends indicates its desire to evaluate and improve its website. The Department website transaction logs, present and future, contain only part of the information required to advance and improve online services.

The suggestions and recommendations offered in this Section provide a beginning point for officials in the Department of Education to redesign and improve the process of managing the website. Many of the recommendations and suggestions offered here must be considered in light of recommendations offered in other sections of the report, e.g., organization of staff to manage website development. The Department is monitoring its site as best it can given the limited resources that have been available for this effort. Some of the problems indicated in this section are easily resolvable—given sufficient staffing.

In addition, the Department may wish to consider implementing a number of training programs for webmasters to better understand and use the data produced by the web management reports. Without better understanding and use of these data, webmasters are unlikely to rely on them as a basis for improving their particular websites. Despite this concern, there is a good basis of log data that can be used to analyze the various websites and improve access to and use of the Department's websites. Access to and use of the websites can be improved by further developing the log analysis tools and techniques at the Department.

V. USER ASSESSMENT

This section presents an overview of the user assessment component of the project, including the purpose and key findings of this portion of the study. The section continues by offering a detailed description of the data collection techniques, findings, and options for action.

OVERVIEW AND KEY FINDINGS

The user-based assessment represents one of the four assessment methodologies that the Syracuse team employed to assess the Department of Education website. The user-based evaluation emphasizes the *raison d'être* of the website - the website users, and advocates site evaluation from the users' perspective. This assessment focused on the needs and perceptions of users interacting with the Department of Education website. The assessment had four main goals:

- Investigate the perceptions of Department customer service personnel regarding the needs and types of users of Department information resources and usability problems with the website;
- Investigate how a small sample of novice users utilize the site to find information;
- Investigate how a small sample of expert users utilize the site to find information;
- Investigate the degree to which a small sample of users could recognize and understand the patterns and groupings of links provided by each of the homepage help buttons;
- Investigate how a small group of expert web designers interact with the Office of Elementary and Secondary Education site.

These questions guided our analysis of data and led to the findings reported here.

KEY FINDINGS

Five themes emerged as key findings from the user assessment. These are:

- The website www.ed.gov provides a wealth of useful education related information.

The Department of Education provides a tremendous amount and wide variety of important information related to education, education funding, education research, educational program development and educational program funding. Users uniformly praised the extent to which Departmental information was available on the site.

- The website is currently structured to best support expert users rather than novices.

The Department of Education's website provides excellent content. Expert users familiar with the Department's structures and procedures can relatively easily use the website to satisfy information needs. The Department may wish to expand its user base to users a) who are less familiar with the Department's structures and procedures and/or b) who have less experience using the web. If the Department aims to expand its website user base, it must adapt its website to meet the needs of less knowledgeable users. Such adaptations might include initiatives to reduce bureaucratic jargon and acronym use, improve the visibility of finding aids and provide brief descriptions, or "discovery information" for all posted links.

- Finding aids are currently not obviously placed for users.

Due to the tremendous amount of information available at the site, the site's large size and complex structure, finding aids become key user resources. High quality finding aids need to placed in prominent and easy to find positions on the web site homepage and in subsite homepages. The Department has already developed high-quality finding aids such as the search features, A-Z index and various department and program listings. Non-expert users had difficulty finding these aids however. Improving their visibility is especially important if the Department chooses to expand its website user base.

- Users have difficulty judging the relevancy or value of information that might be found via a particular link.

Users sometimes have difficulty judging the relevancy or value of a particular link based solely on its title. Link descriptors, or "discovery information" aid users by allowing them to learn about the information a link provides prior to choosing that link. Many Department of Education webpages currently provide discovery information (e.g., the Publications and Products button page). Many other pages, however, do not provide discovery information.

- The website currently relies too heavily on content drawn "as is" from print publications. The Department needs to determine to what extent it will support the evolution of the website to a user-oriented site.

Faced with a great deal of pre-existing information to put up on the web, most organizations posted the information in its current form, and did not commit significant resources to considering more effective ways to present it. New information often exists first for print format and then is transferred "as is" to the web.

The next stage for many sites is to evolve beyond this approach to a more user-oriented format. Initiatives for website evolvement might include projects to represent reports in multiple formats (e.g., MS Word file, PDF, html), to index reports and provide users links to indexed sections and to increase the amount of support material provided for novice users. It would also require a general resource commitment for innovation in information and service presentation in the web environment.

DATA COLLECTION TECHNIQUES

The project team utilized a multi-method data collection approach in the user assessment. A multi-method approach advocates collecting two or more sets of data on the same phenomenon using different data collection techniques. Analysis of the different data sets provides a richer explanation of the phenomenon of interest than an isolated data set can supply. The study team collected several sets of data regarding user experiences with the Department of Education website. The data collection activities included:

- Interviews with Department of Education customer service personnel to investigate user types and their needs and common problems faced.
- A task-based novice user evaluation of the website, and a task-based expert evaluation of the website, which measured users' reactions to the site after using the site to answer a series of questions;
- A user evaluation of the homepage buttons, in which users analyzed and reacted to printed out copies of the pages linked to by the left hand column home buttons on the www.ed.gov home page;
- An expert web designer evaluation of the OESE website.

The study team designed these activities to collect different types of data about user needs and user interaction with components of the website. The following subsections will provide details about each of these data collection activities. The second to the last section of this chapter will review the expert evaluation of the OESE site.

Interviews with Department of Education Personnel

The study team designed the first data collection activity to:

- Identify customer service personnel's perceptions of types of users of the Department's information resources;
- Identify customer service personnel's perceptions of the information needs of the Department's information resource users;
- Identify key information resources used by the Department of Education customer service personnel;
- Document usability problems with the Department of Education website as perceived by customer service personnel;
- Document customer service personnel's perceptions of user expectations of the website.

Customer service personnel within organizations develop an excellent and often underutilized understanding of users, user needs and user problems. Therefore, to collect data regarding users, needs and problems, the study team interviewed information specialists and customer service experts at the Department. The Coordinating Team at the Department arranged interviews with staff with responsibilities associated with answering queries from the public. The study team asked to speak with personnel responsible for email, mail and phone inquiries.

The study team spoke with thirteen employees onsite during the October 6-7, 1998 field research session. The participants worked in a variety of offices and Principal Operating Components (POCs) and held a variety of different positions. The participants had an average tenure at the Department of Education of seven years. On average, they had worked providing information services for the public at the Department of Education for six years. They had worked developing internet-based services at the Department of Education for an average of two years. Participant Departmental affiliations included the National Library of Education, the Office of Intergovernmental and Interagency Affairs, the Applications Contractor, the Information Resource Center (1-800-USA-LEARN), the Office of the Under Secretary/Office of the Deputy Secretary, the Student Financial Assistance Program, the Ed Pubs Service, and The Office of the Chief Information Officer's Technology Center.

Most participants worked an average of three to six hours a day interacting with the public, answering questions about the Department of Education. Most of the participants however, spent under one hour a day planning, implementing or maintaining internet based services. Participants had a great deal of experience with the Department of Education and the users of Department of Education information resources. Accordingly, they provided a wealth of information about the users of Department of Education information resources including users of the website, library and toll free help lines.

Each interview lasted from forty minutes to one hour and focused on the Department of Education customer service personnel's understanding of Department of Education users, user needs and user problems. Study team asked the employees open-ended questions, allowing the employees to explain what they felt was important regarding users and their needs. Additionally, we collected demographic information via a questionnaire. Data collection materials can be found in Appendix V-1.

Task-Based User Assessment of the Site

For the task-based user assessment, the study team created four tasks to guide the participants' exploration of the www.ed.gov site. Participants were allowed to proceed through the tasks at their own pace, until fifty minutes had past. At that point, the study team stopped all participants and had them complete a questionnaire on their perceptions and then participate in a group debriefing interview. Data collection materials are available in Appendix V-2.

The study team recruited two groups of users for the second data collection activity. The first group of four users, the "novice" group, included a teacher, a school administrator, a district technology coordinator and an Education graduate student. The second group of users, the expert group, consisted of five educational information specialists from the ERIC Clearinghouse. All participants had bachelor's or master's degrees in Education.

Group One

The average age of the Group 1 participants was 30-40 years. The teachers had between 14 and 18 years experience in local public schools. The educational administrator had 8 years experience in administration at a local public elementary school. The technology coordinator had 8 years experience as a technology coordinator in a local rural public school district.

Group one had moderate experience using the internet and little experience designing or evaluating web pages. The participants averaged four years of internet use. Two participants had never designed a web page. One participant had designed one, another (who worked as a district technology coordinator) had designed six. Group one rated its skill in navigating the WWW as moderate (3.5 with 1 as low and 5 as high), its experience in evaluating the design of websites as low to moderate (2.75) and its experience evaluating the content of websites as low to moderate (2.5). They rated their experience using the Department of Education website as low (2).

Group 2

Group two consisted of five educational information specialists from the ERIC Clearinghouse. Three of the five Group two participants had also worked as teachers, one for four years, one for six years and one for thirteen years. The remaining two participants had education degrees and had completed student teaching, but had not worked for a school district. The participants had worked as educational information specialists for an average of 2.3 years.

Group two had higher levels of experience using the internet and designing and evaluating web pages. The participants had used the internet for an average of four years, and had designed an average of 12.4 web pages. The rated their skill in navigating the internet as very high (4.6 with 5 as high), and their experience with the Department of Education website as moderate (3.4). They described their experiences evaluating website design as moderate (3.2) and their experience evaluating content as very high (4.6).

Study team held separate data collection sessions for each group. The investigators asked the two groups of participants to attempt to answer four questions using the website as an information source. The study team chose four questions that would require the participants to navigate and explore several different parts of the website. The study team did not provide any instructions on how to find the appropriate information required to complete the tasks. Thus, each participant was free to explore the site in whatever manner he or she saw fit. The study team gave the participants fifty minutes to complete the four tasks.

The study team performed a path analysis of the web server log files that captured the URLs that the participants used in attempting to answer the assigned questions. Appendix V-3 contains a copy of this log file. Log files record requests made to the www.ed.gov server for page downloads. Most PC web browsers however temporarily store, or cache, the images of recently visited pages. If a user visited a page and then returned to that page a few moments later, the web browser would pull the page image from its cache and not direct a request to the www.ed.gov. Therefore, the log file on the web server would not record a second visit to this page. In order to overcome this problem, the study team asked each participant to write down the title (not URL) of the pages they visited during their search. By comparing the participant lists with the log file of their visit, the study team could reasonably trace the participant's interactions with the website.

After the participants completed the four tasks, the study team asked them to complete a short questionnaire to capture information about their impressions of the website and how using the website made them feel. The study team employed the WebMAC© website motivational instrument which measures the degree to which websites satisfy and motivate users (Small, R. 1997. Assessing the Motivational Quality of World Wide Websites. ERIC Clearinghouse on Information and Technology, ED407930).

The Website Motivational Analysis Checklist (WebMAC©) assesses the motivational qualities of websites including appeal, usefulness and ease of use. WebMAC© collects data on four variables:

- The degree to which website is engaging and stimulating.
- The degree to which website contents are useful and credible.
- The degree to which the website is organized and easy to use.
- The degree to which users find the website satisfying and effective.

Using the scores from these four variables, the checklist rates websites along two dimensions:

- User's expectation for success using the website.
- User's perception of the value of the website.

Websites may fall into one of four quadrants created by the intersection of these two dimensions. Appendix V-4 illustrates the WebMAC© analysis scoring template. Websites should aim to score in the upper right hand quadrant of the scoring template, indicating high user expectations of success and high user perception of value.

Finally, the study team coordinated a group discussion regarding the groups' experiences with the website and their opinions regarding the purpose of the Department of Education website.

User Evaluation of Homepage Buttons

The study team designed the third data collection activity to investigate the degree to which users could recognize and understand the patterns and groupings of links provided by each of the homepage help buttons, reflecting a concern expressed by the Department Coordinating Team regarding the utility and placement of the buttons. The team recruited a group of seven novice participants to evaluate the homepage buttons content. The group included two teachers, two school administrators, a district technology coordinator and two Education graduate students.

The average age of the participants was 20 to 30 years, though three participants were older. The teachers had between 4 and 30 years experience in local public schools. The educational administrators had between 8 and 25 years experience in administration at a local public schools. The technology coordinator had 8 years experience as a technology coordinator in a local rural public school district. All but one of the participants already had master's degrees in education. The group had an average of three years experience using the internet, with two participants having little experience (zero and one year). Three of the participants had designed web pages. One participant had designed six, but the other two had created substantial numbers of pages (200 +). Group one rated its skill in navigating the WWW as moderate (3.3 with 1 as low and 5 as high), its experience in evaluating the design of websites as moderate (3.4) and its experience evaluating the content of websites as moderate (3.3). The two participants with less experience rated themselves substantially lower in these areas. The group as a whole rated their experience using the Department of Education website as low (2.4).

For this data collection activity, the study team printed out the content of the pages represented by the eight homepage left margin buttons. The study team stripped each of these pages of all its identifying and indexing information including titles, subtitles, URLs, navigation icons, and introductory paragraphs. The degree to which each page contained identifying and indexing information varied greatly with some pages containing little more than lists of unexplained links. The study team made copies of each of these pages and asked each of the participants to carefully read the contents of each page. The study team instructed the participants to then type a reaction to the page, including the following material:

- A brief description of the page's contents as the participant understood them.
- A brief reaction to the page including all of the following: the participant's ability to understand the contents of the page, the participant's emotional reaction to content on the page, any questions the participant had regarding the content of the page. The study team emphasized that participants could include both positive and negative reactions.

Finally, the study team asked the participants to physically edit each printed out page with a pen by:

- Circling parts of the page which the participant had a difficult time understanding.
- Crossing out any content that the participant considered inappropriate for the page.

The team rotated the order in which participants evaluated each of the pages in order to ensure that each page received equivalent evaluatory effort. Thus, each of the button pages was either evaluated first or second by at least one evaluator. The data collection materials for this data collection activity can be found in Appendix V-5.

FINDINGS

Interviews with Department of Education Personnel

The goal of this portion of data analysis was to identify major users of the site, the information needs which users attempt to fulfill at the site, users' expectations of the site, and website based and non website based information which users find helpful in satisfying information needs. Analysis of data from the interviews with customer service personnel resulted in five major findings.

- In general, the Department of Education has a well developed view of its user base and the needs of those users;
- In general, customer service providers within the Department of Education seem satisfied with the content that the website provides, though they are not always satisfied with the arrangement of that content.
- The growth in popularity of the web, combined with the varied nature of the Department of Education website audience, creates a situation in which the Department of Education is providing web-based services to people with little web experience.
- Some users are confused about the roles and responsibilities of the Department of Education. These users expect the website to provide services it cannot.
- Individual offices must construct and maintain their own FAQ's and answer files which often duplicate information as no usable Department-wide networked resource exists.

The remainder of this section provides more detail about the above findings.

Types Of Users Of The Department Of Education Website

The research team approached this question using the Department of Education website on-line evaluation report's typology of users as a baseline of user groups. All participants agreed that the eight user groups identified by the on-line survey constituted major user groups for the Department of Education website and other information services. These eight groups included: educational administrators, teachers and professors, study team and analysts, students, parents, librarians, writers and reporters, policy makers and legislators.

In addition to the above listed user groups, participants noted that businesses and lawyers acted as information service customers. Businesses would contact the Department seeking information about how to market information to individual schools or school districts. In addition, businesses contacted the Department regarding marketing products directly to the Department of Education. Lawyers would contact the Department seeking statistical information. Additionally, various participants discussed a number of types of educational administrators (e.g. financial aid professionals, principals, state agency personnel), stressing the broadness of the current user categories.

Finally, the department hasn't addressed whether additional under-served audiences for their materials exist. One participant suggested that the Hispanic population is better served now via Spanish speaking 1-800 call operators. The Department will need to decide how many resources to commit to including traditionally under-served populations with website materials.

Information Needs Of The Department Of Education Information Resource Users

The study participants explained that users held a wide array of information needs, many outside of the jurisdiction of the Department of Education. For instance often times users, not understanding the role of the Department in local public education, would call with concerns or complaints related to their local or state educational services. Another common need involves rating or ranking local schools or school districts. Common information needs within the Department's jurisdiction included information about publications, information about student financial aid, and grant eligibility information.

Another noteworthy information need involves information about the Department of Education itself. Participants noted that internal and external users often needed information about the roles and responsibilities of the Department, the organizational structure of the Department, and contact information for specific programs and projects. One participant stressed the need for a more specific and detailed on-line organizational chart.

Agency customer service personnel also mentioned the following as common information needs of web, mail and phone customers:

- Parents (and students) complaining about school districts
- Looking for publications
- Trying to do research
- Student aid questions and complaints (largely about use of online forms)
- Availability of jobs/internships at the Department

- Animal cruelty (how to teach about)
- Statistical questions
- Teacher certification questions
- Information on whether college/programs were accredited
- Which schools offer which programs
- Information on default rates
- Broken links
- Title IV inquiries
- What's the school code (for financial aid)
- Parents calling to find out how they can help their child learn
- What parents can do if they think their civil rights are violated
- What grants are available to groups, individuals

These were needs remembered by customer service personnel and are probably a subset of the full range of questions/needs of users.

Information Resources Used By The Department Of Education Customer Service Personnel

Department customer service personnel reported using a variety of materials to satisfy users' information needs. Participants regarded personal contacts with knowledgeable others in a variety of offices as a key information source. The importance of identifying, establishing and maintaining intra-organizational contacts emerged as a key theme of the interviews. In addition to personal contacts, customer service personnel described relationships with other customer services offices such as the National Education Library, the Information Resource Center and the Office of the Secretary in each department.

Customer service personnel made use of a number of Q&A, or frequently asked question files to answer users' questions. The Information Resource Center (IRC), FREE, and the National Education Library made use of the IRC's FOLIOview database of questions and answers. Library staff noted that network and hardware restrictions required them to dump a copy of FOLIOview into a desktop WordPerfect file for local Library use. Other participants had created their own personal Q&A files. No cross-agency help database currently exists. Respondents reported that they believed that other parts of the organization were asked similar questions and that sharing information on questions and answers to these cross-agency questions would be helpful.

All participants described frequent use of the Department of Education website to satisfy users' information needs. Participants noted that the web provided many advantages over local Q&A files including distributed maintenance responsibilities. A local Q&A file requires the local holder to periodically review and update information and phone numbers. With the Department website, the responsibility of updating information resides with individual offices. The "known usability problems" section of this report explains that unfortunately, some offices do not regularly update their website files, resulting in the distribution of incorrect information about their programs and services.

Many participants noted that the creation of the "ED Pubs" webpage on the Department site had vastly improved their ability to access and use information about Department publications.

Known Usability Problems With The Department Of Education Website

Study participants noted that their users had had a number of usability problems with the www.ed.gov website. These problems can be grouped into five major categories:

- Confusion regarding Department services
- Location of information
- Incorrect or misleading information
- Inexperienced users
- Support for visual-auditory impaired guidelines

CONFUSION REGARDING RESPONSIBILITIES

Users come to the website with misperceptions regarding the roles and responsibilities of the Department of Education. These misperceptions lead them to look for information that does not exist. One participant suggested that the website include information about the roles of Department of Education closer to the website's homepage in order to dispel many of the misunderstandings regarding the Department's roles.

Another responsibility issue revolved around the degree to which Department of Education employees should answer email correspondence faster than written correspondence. One participant noted that some Department employees treated email similarly to written correspondence, following lengthy "controlled correspondence" procedures. These procedures significantly slow the rate of return correspondence. Email users however, expect more rapid responses given the ease of the media. To what extent should Department employees then answer emails faster than traditional paper based correspondence?

LOCATION OF INFORMATION

Participants made a number of suggestions about the location of specific pieces of information to improve site usability. One participant suggested including information about the publishing department on the Publications and Products portion of the site so that users could contact that department more easily for additional information about the publication. Another suggestion was to increase accessibility to the Digest of Education Statistics by reducing the number of levels users had to navigate to locate it. (It is currently 2 clicks from the homepage which may suggest that the participant was misremembering.) Other users suggested making contact information more prominent on the Department homepage. Another suggestion included making the current organizational chart more detailed, as it does not provide information about the different offices within each department.

Several participants noted that site redesigns often resulted in confused users as the location of specific pieces of information changed within the site. Although server side redirects will update bookmark users to the new location of their bookmarked page, site redesign compels users who enter the site via the homepage and navigate through to their needed information to relearn much of the site's organization.

Incorrect Or Misleading Information

A number of suggestions revolved around the website's inclusion of incorrect or misleading information due to certain offices' infrequent webpage update practices. The participants noted that some offices did not remove time-sensitive information after its expiration date, leading to the confusion of some users.

Another often noted problem revolved around the inclusion of "black hole" email addresses on office webpages. Black hole addresses consist of office customer service or help email addresses which no one monitors. Thus, users may send a message to these addresses and never receive any response. Some participants explained that they always worried about referring people to these office customer service or help email addresses for fear that no one would respond to the message.

Inexperienced Users

As the Department of Education moves to expand its user base to include more types of users, and as more of the general U.S. population experiments with internet usage, the problem of accommodating novice users will increase. Participants noted that novice users had difficulty with more advanced web-usage activities such as downloading and activating PDF files as well as with entering good search terms in the Department website search engine. For example, one participant noted that many novice users do not know to use quotation marks when entering related terms into the search engine, resulting in massive and useless lists of "relevant" search results. Participants suggested a number of items that would assist novice users including: non-case sensitive URLs, an FAQ button on homepage (which actually does exist), an "About Us" button and more information on meaning of choices on homepage.

Support For Visual-Auditory Impaired Guidelines

Although the Department of Education has prepared extensive visual-auditory impairment web design guidelines, not all offices that create webpages take the time to ensure their pages and services are compliant with these standards. Offices see the impairment guidelines as a last step prior to going live. In reality, consideration of the impairment guidelines need to come at the beginning of the design process in order to ensure that chosen applications and layout will support visual-auditory impairment needs.

Other miscellaneous usability issues included the questionable comprehensibility of the Department's home page buttons, the lag time needed to post speeches and information about current events, and the FAFSA forms lack of support for recently released versions of web browsers.

User Expectations Of The Department Of Education Website

According to the customer service representatives who participated in the user perspective portion of the study, many users expect that the Department of Education website will offer services outside of the Department's jurisdiction. As mentioned in section a) of the known usability problems section, users believed that the Department would offer information about a variety of state and local education issues.

The electronic nature of the medium seems to increase user expectations about the speed and timeliness of services. Some participants noted that email based users seemed to expect faster responses to their electronic inquiries than the typical response time for paper correspondence. Participants also noted that users expected the Department to post speeches and new publications within one day.

Users also had high usability expectations for the site. They expected that the FAFSA forms would work with any browser. Through the interviews with the participants, it became apparent that users expected that email sent to *any* customer service email account would result in a response and appropriate action, even if it needed to be referred to another department. Thus, according to the participants, users did not always specifically direct their email help solicitations to the appropriate department. The participants also noted that users expected the Department of Education to satisfy their phone based help inquiries with minimal call transfers or dead end voice mail messages.

Task-Based User Assessment of the Site

The task-based assessment enabled participants to report their perceptions of the website based on actual usage of the site. The study team believed that the differences between the two groups (novice and expert) would result in the two groups having very different experiences and very different comments about the website. The investigators also believed that data from the two different user groups might allow the Department of Education to design pages to accommodate both low and high skill users.

The study team analyzed performed three analyses associated with the task-based assessment including the identification of major focus group themes, statistical analysis of the WebMAC© questionnaire results and path analysis of users' movements through the website.

Group 1

Focus Group Results

Data analysis of focus group discussion revealed the following seven themes:

- Users' inability to locate and use finding aids;
- Misinterpretation of the "Programs and Services" button ;
- Suggestions regarding the current layout of the homepage;
- User frustration with browsing;
- Inability of some users to navigate back to the homepage from deeper layers;
- Inability of some users to interpret graphics as links;
- Lack of confidence in using the search engine.

The next section will provide more details about each of these themes and also discuss the participants' views regarding the purpose of the www.ed.gov website.

Inability to Locate and Use Finding Aids

Participants complained about the difficulty of finding the finding aids (Search & A-Z) on the www.ed.gov site. Searching without finding aids required the users to browse through the site via seemingly relevant links, looking for clues. Most participants who found a finding aid found it on a page other than the homepage.

Misinterpretation of the "Programs and Services" button

All five participants unsuccessfully attempted to use the "Programs and Services" button as a site index. They stated that they expected that the "Programs and Services" button would provide an easily scannable index of the programs and services offered by the Department (similar to the service provided currently by A-Z). They were disappointed and frustrated by the current page contents and did not consider it a satisfactory finding aid.

Current Layout of Homepage

Several participants complained about the current layout of the homepage. They felt that the current design first drew their attention to the "headlines" section - but that this section did not provide any finding aids to help them complete their tasks. Next their attention went to the left-hand buttons. They suggested that the Department change the color of the buttons to make them "stand out more". As noted above however, the buttons also did not provide satisfactory finding aids. Most of the participants never saw the search/a-z/faq/directories tool bar at the top of the page. (This parallels the results of the transaction log analysis—see Section IV of the report.)

USER FRUSTRATION WITH BROWSING

Because the users had to rely on browsing to find relevant material, they became very frustrated with the amount of irrelevant material they had to browse through. As one participant explained, "I hate surfing". Participants wanted a simpler way to quickly focus on topics of interest within the site.

NAVIGATION PROBLEMS

The participants had problems returning to the Department homepage during their searches because many office and program pages did not provide return links to the Department homepage. Also, the varying layouts of the office and program homepages created some frustration and created disorientation and feelings of "being lost".

GRAPHICS PROBLEMS

Some participants had trouble distinguishing hypertext links. Either they found the links too lightly colored to distinguish, or they had difficulty distinguishing between plain graphics and image-map links. "I can't tell what is a button!" one participant exclaimed.

SEARCH ENGINE

The two participants who used the site's search engine expressed a lack of confidence in the engine. They were confused as to the number of different search engines at the site because the search feature was marked differently on different pages. The participants also felt that the search engine required some searching/query developing expertise for good use. One expressed annoyance that the title lists of key word search results often did not include the key word. Thus the participant could not judge how the relevancy of the use of the keyword in that document. Another search function user expressed frustration with her inability to do more sophisticated searching without reading the search engine directions.

Purpose of Website

The study team also asked the participants to discuss the purpose of the www.ed.gov website. The participants all agreed that the site should provide access to information, but they disagreed about the primary audience. One participant thought the site should show school accountability for parents and taxpayers. Another thought it should highlight and describe services for educators - a "what can you do for me?" approach. One thought it should provide classroom materials. Another disagreed and thought other sites like ERIC offered those services and that ed.gov should concentrate on administrators. Another suggested that the site tie together all governmental education institutions including state and local level institutions. Finally, one noted that she felt the purpose of the website was to reduce the number of phone calls the Department had to take.

Path Analysis

Analysis of user log files combined with data from the participants' notes regarding the pages they visited confirmed and added information to several of the findings from the findings from the focus group. Path analysis showed that four of the Group 1 users used the A-Z finding aid, and that two of the Group 1 users used the search function. Furthermore, one participant used the AltaVista commercial search engine. The path analysis also shows however, that all of the participants did not find or use the finding aids until *well into their search sessions* and often on pages other than the main home page. This confirms the focus group finding that Group 1, novice participants, had difficulty locating the finding aids within the site. See Appendix V-6 for a copy of the users' paths.

WebMAC© Results

As discussed earlier, the Website Motivational Analysis Checklist (WebMAC©) assesses the motivational qualities of websites including appeal, usefulness and ease of use. Group one averages for each of the four variables are listed below. The highest possible score is a 30. Small and Arnone indicate that a score under 20 indicates a need for improvement.

Degree to which website is engaging and stimulating (ES)	15.4 (with outlier removed -18)
Degree to which website contents are useful and credible (UC)	19.4
Degree to which the website is organized and easy to use (OE)	12
Degree to which users find the website satisfying and effective (SE)	16

WebMAC© combines the ES and UC scores to create a score for the user's expectation for success using the website. Group one scored 34.8 points on this dimension. WebMAC© combines the OE and the SE scores to create a score to represent the user's perception of the value of the website. Group one gave the Department website a score of 28 on this dimension.

Websites may fall into one of four quadrants created by the intersection of these two dimensions. Appendix V-7 illustrates the results on the WebMAC© analysis scoring template.

Group Two

FOCUS GROUP RESULTS

The second group was composed of information professionals familiar with education material. The study team expected that the second group would use more sophisticated search techniques and finish the assigned tasks much faster than the first group of teachers and administrators.

This expectation was only partially fulfilled. The second group did use much more sophisticated search techniques. All of the participants used the search feature and several used the cross-site index within the search feature. One participant used the A-Z index and three participants used the Programs and Services button. Most of the participants however did not finish the tasks any faster than the less experienced Group 1 participants.

Data analysis of the Group Two focus group discussion revealed the following seven themes:

- Users complained about the lack of 'discovery information' or link descriptions;
- Users complained of the overuse of bureaucratic language;
- Users complained of the lack of easy, intuitive interfaces;
- Some users experienced navigation problems;
- Suggestions regarding the current home page design.

LACK OF DISCOVERY INFORMATION

Several of the participants expressed dissatisfaction with the "discovery information," or text which describes the content of a given link. In general they felt that the text surrounding links did not provide adequate cues regarding the content of that link. One participant claimed that the summaries given for a link did not give enough to evaluate the relevancy of links. Another explained that you can't decide by looking at a link if it will lead to your desired information. Another asserted during a general discussion that much of the discovery information was misleading either because the information may not have accurately reflected the content to which the link connected or that the discovery information may have used language which she did not perceive as accurately descriptive of that content.

USE OF BUREAUCRATIC LANGUAGE

Several users also complained about the overuse of bureaucratic language at the site. They felt that discovery information and link titles used language more appropriate for Department of Education employees than average users. The researcher asked the participants who had used the Programs and Services button to find information if they thought less experienced users would also be able to use Programs and Services to find information. They felt that more novice users would find Programs and Services confusing. They felt that one had to have a good understanding of the Department structure, and what things qualified as "programs" or "services" to find information through that button. They also felt that the website did not use consistent headers.

LACK OF EASY, INTUITIVE INTERFACES

Participants complained about the non-intuitive arrangement of the site. One participant explained that she always uses the cross-site index when searching for information at the Department of Education website because otherwise she would never be able to find anything. One participant suggested that the Department should construct separate indexes for teachers, parents and other user-groups that would provide a more intuitive interface to department resources. Several users asked about the "Parent's Guide to the Department of Education" which they remembered as a good idea which was poorly implemented.

NAVIGATION PROBLEMS

Similar to Group One, participants in Group Two also complained about disorientation at lower levels resulting from lack of navigational tools and unmarked site-exiting links. Several participants complained that lower level pages did not provide links back up to higher level pages or to the Department home page and did not include navigational buttons. Also, users could often not determine if they had left the Department home page or not. The page did not provide clear warnings when directing users to offsite pages.

HOME PAGE DESIGN SUGGESTIONS

Participants also complained about the "clutter" of the homepage. They suggested that the Department not list all the headlines on the front page, but on a second layer page in order to free up space on the homepage.

Purpose of the Department of Education Website

Participants in Group Two also did not agree about the purpose of the Department website. Some felt it should serve all the needs of many groups including parents, teachers and students. Others felt it should not try and serve all needs and should concentrate on certain issues such as legislation and their programs. Several participants suggested that the Department not try to provide all education related information, but rather concentrate on acting as a pointer to other sites which provide information. Other participants weren't sure what information the site should provide, but just stressed that the Department currently provided too much "who we are" information.

Path Analysis

In contrast to the novice users, the expert users located and utilized the site finding aids more quickly. Four out of five of the expert users used the site search function. The one user who did not use the search feature told the study team that she normally did use the search function, but chose not to use it in this instance in order to see if she could find the information without using it. Most of the expert users began utilizing the search feature earlier in their site interactions.

WebMAC© Results

Group two averages for each of the four variables are listed below. As mentioned earlier, the highest possible score is a 30. Small indicates that a score under 20 indicates a need for improvement.

Degree to which website is engaging and stimulating (ES)	15.75
Degree to which website contents are useful and credible (UC)	16.63
Degree to which the website is organized and easy to use (OE)	16
Degree to which users find the website satisfying and effective (SE)	18

WebMAC© combines the ES and UC scores to create a score for the user's expectation for success using the website. Group two scored 32.38 points on this dimension. WebMAC©combines the OE and the SE scores to create a score to represent the user's perception of the value of the website. Group two gave the Department website a score of 34 on this dimension. Appendix V-8 illustrates the WebMAC© results plot for the expert group.

Comparison of Group One and Group Two Scores

Group one and group two both gave the website around 15 or 16 points to indicate the degree to which website is engaging and stimulating. The more novice users in group one scored the website slightly higher on the variable measuring the degree to which website contents are useful and credible. Interestingly, the novice users gave the website a significantly lower score for the organized and easy to use variable than the expert users (12 vs. 16). Appendix V-9 illustrates the WebMAC© results plots comparing both groups.

Evaluation of Homepage Buttons Content

This section reviews the findings of the button pages content evaluation. It first outlines the major themes expressed in the post evaluation focus group. It then provides an overview of participants' comments about the button pages, arranged by page. For transcripts of participant reactions to each page, see Appendix V-10.

Focus Group Themes

In the post-session focus group, the participants' comments centered around the following two themes: the need for the pages to be "eye easy" and uncertainty about the purpose of certain links on some pages.

NEED FOR MAKE PAGES "EYE EASY"

The participants had higher opinions of those pages that they found easier to look at. Pages that were easy to look at contained several of the following characteristics:

- Discovery information for each link;

- Extensive use of bullets or numbering. In some cases, the participants had a difficult time distinguishing the end of one bunch of grouped material from the beginning of another. For example, on the Presidents and Secretary's Initiatives page, the participants could not determine if links belonged to the paragraph located directly above or below the links. They suggested numbering the points and increasing spacing between the points/related links and the next point.

- More extensive use of subheaders. Because the study team took out all the subheaders which the pages provided, participants naturally complained about lack of subheaders. However, participants complained about lack of subheaders on all pages, even those pages that did not originally include subheaders (e.g. Programs and Services).

  Also, participants expressed a particular wish that some pages with particularly extensive link lists would not list out all of the links on the 2nd level, but rather just provide a general category link to a 3rd level which would then list out all links. For example, on the "Other Sites" page, the participants suggested making a "state resources" index link which one could choose and then see the more extensive list of state resources.

- Links presented at the beginning of discovery information (not in the middle or end). For instance, the participants did not like the Direct Loan Web Site link on the financial aid page because of the links location at the end of the discovery information.

- Standardized font sizes. For example, the participants found the mixed font sizes on the Presidents and Secretary's Initiatives page distracting.

- More explicit point/subpoint structure. Some pages use large bullets for subpoints and small bullets for main points (e.g. Statistics Page). The participants found the lack of coordination between bullet size and organizational structure confusing.

THE PARTICIPANTS DID NOT UNDERSTAND THE PURPOSE OF SOME LINKS ON CERTAIN PAGES.

Given their understanding of the content and purposes of the page, the participants did not understand the location of certain links on certain pages. See the following individual page analysis for examples.

Participants' Reactions by Page

This section summarizes the participants' reactions by button page. Appendix V-10 provides a full transcript of each user's reactions to each page. The section then provides a review of the options that the Department of Education might consider when making use of this data.

ED OFFICES AND BUDGET (www.ed.gov/about.html)

The majority of participants identified this page as an introductory page to the Department. They felt that including descriptors or discovery information for each link would make it easier to judge the relevancy of links to information needs. Some also felt the links might appear in a more useful order.

OTHER SITES (www.ed.gov/EdRes/index.html)

Participants had a difficult time understanding the theme or purpose of this page. Some identified it as a "educational resource organizational directory" but others became confused by the variety of information provided. The participants who looked at this page seemed overwhelmed by the number of links presented. They suggested organizing links by themes and providing indexes or headers for those themes. Also, the participants pointed out the need for discovery information about each link. They had a difficult time judging the relevancy of each link based on just its title.

RESEARCH AND STATISTICS (www.ed.govstats.html)

Some users were able to identify this page as a list of links related to educational research. The participants noted that this page also did not provide discovery information for links. They suggested that better organization of related links into groupings with headers might ease page browsing.

PROGRAMS AND SERVICES (www.ed.gov/programs.html)

The participants were not able to identify the purpose of this page beyond "an index page of some sort." However, they appreciated the discovery information that this page provided for all its links. Further, they appreciated that the page explained all acronyms. They suggested that designers might improve the page by grouping like links together and proving headers.

STUDENT FINANCIAL ASSISTANCE (www.ed.gov/finaid.html)

The participants all identified this page as a page for financial aid resources. They appreciated the discovery information provided for most of the links on the Financial Aid page. They noted however, that this page did not fully explain all acronyms and did not always place links at the beginning of the discovery information –

forcing the user to scan the whole paragraph. They also suggested that this page attempt to group like links and provide subheadings

FUNDING OPPORTUNITIES (www.ed.gov/funding.html)

Participants were able to identify this page as a source of information regarding federal funding for education programs. They suggested adding discovery information to all the links. Without the discovery information, some links did not seem relevant (e.g. Safe and Drug Free Schools).

PRESIDENT'S AND SECRETARY'S PRIORITIES (www.ed.gov/inits.html)

Most of the participants identified this page as an index page of information related to educational initiatives. They found the order of presentation of the information on the page confusing however. They suggested moving the "gist of the page" or the Secretary's introduction, from the middle to the top. They also did not like that the page presented the points out of order. They did like the presentation of related links under each point. They suggested standardizing font sizes in order to improve the appearance of the page.

NEWS AND EVENTS (www.ed.gov/news.html)

Participants were able to identify this page as a press release and publications page. They found the amount of information and lack of indexing overwhelming however. They stressed the importance of grouping like links and providing indexing/headers to improve usability. They also suggested proving discovery information for each link so that readers could more easily judge relevancy. Finally, several participants questioned the relationship of information at the end of the page to the page's main theme.

Publications and Products (www.ed.gov/pubs/index.html)

The participants identified this page as a publications and information resource directory page. Several felt that this page was similar to the Programs and Services page. Many felt that this was the best page. It provided good discovery information for each link which gave the participants confidence that they could choose the most appropriate link for their needs. They suggested improving the page by grouping like links into categories and providing indexing for those categories.

ASSESSMENT OF OESE WEBSITE

This section will provide an overview of the research method used by the investigators to evaluate the Office of Elementary and Secondary Education's (OESE) website under the www.ed.gov domain. This section will also review the findings of that assessment and make review various design options that OESE may consider.

Method

The study team employed the "expert evaluator" technique in order to evaluate the OESE website. The expert evaluator method centers around using usability experts to identify usability problems in systems design. It is important to point out that these experts are not able to comment on whether the site meets organizational objectives. Answers to questions, such as, "Does the site's content represent the content available from the organization?" or "Does the site reach the appropriate audiences?" are not possible.

Evaluators

The study team recruited four highly experienced website designers to complete the expert evaluation of the OESE website. The web designers had considerable experience using the WWW (average 5 years), and high levels of experience designing, evaluating design and evaluating content within websites. The web designers had each created between 50 and 200 plus websites each over the last several years. The web designers' high levels of expertise qualified them to serve as expert evaluators of the OESE website.

Sample

The OESE website consists of eight major subsites and a series of introductory pages. To evaluate the site, expert evaluators examined the 1st and parts of the 2nd level of each of the eight subsites, in addition to browsing through the other shallower links included off the main homepage. In pursuit of this aim, the researcher instructed the evaluators to browse at least one link down in each of the eight subsites. This technique guaranteed that evaluators would evaluate much of the same material (the 1st level of the subsites) while also guaranteeing that at least one evaluator would look at several different 2nd layer pages within each of the subsites.

Subsites Examined: Compensatory Education (CEP)
CSRD
Goals 2000
Impact Aid
Office of Indian Education
Office of Migrant Education
Safe and Drug Free Schools
School Improvement
Main homepage and Associated Links

In order to ensure that the web design experts would pay equal attention to each subsite, the study team rotated the order in which the experts evaluated the sites. Thus, one evaluator began by evaluating the CEP site; another evaluator began with the Impact

Aid site, and so on. This rotation method guaranteed that at least one evaluator would evaluate every subsite, maximizing evaluation coverage, and that each subsite would be evaluated at the beginning of the evaluation period before the evaluators became tired.

The study team gave each evaluator a set of instructions with suggested criteria for website evaluation. Please see Appendix V-11 for instructions. The instructions suggested that the evaluators evaluate each of the subsections, and the OESE site as a whole, on the following five criteria:

Orientation	Overview, scope, mission, liability, copyright if appropriate
Design	Aesthetics, consistency, and appropriateness
Navigation	Minimal user skills required, clear indicators/links, link provided to appropriate homepages (OESE, ED), obvious and easy to understand finding aids
Quality	No dead end links, outdated information, incomplete pages, appropriateness of content
Customer Service	Obvious and easy mechanisms to provide feedback, obvious and easy to understand help features

The study team presented the evaluators with the above five criteria as guides. They also stressed that the evaluators could include comments on any additional material they felt important.

The evaluators examined the OESE site simultaneously for one hour, using equivalent desktop computers and Internet connections. The study team cued the evaluators every ten minutes in order to encourage them to continue moving through the site and evaluate as many subsites as possible. After the one hour evaluation period, the study team coordinated a group discussion in which the evaluators shared their experiences and their opinions of the OESE site in general and the specific subsites that they evaluated. After a thirty minute discussion, the study team ended the data collection event and thanked the participants for their time.

Findings

This subsection reviews the findings of the expert evaluation. First it outlines some of the general reactions of the evaluators which apply to the entire OESE site. Second, it reviews the evaluator's comments for each of the subsections within the OESE site. The report continues with the final section, which outlines some of the options for the OESE site designers based on the results of the site evaluation.

Focus Group Themes

Because many of the evaluators examined different parts of the OESE site, many of their comments apply to only certain parts of the OESE site. Certain themes, however, emerged from the post-evaluation group discussion which apply to the entire site.

TARGET AUDIENCE

The four evaluators felt that the OESE site primarily catered to users with high levels of knowledge about the website and OESE programs and agency officials equally familiar with OESE and its programs. For instance, the evaluators noted that the site assumed a given level of knowledge regarding grant writing. The site presented helpful information about grants, but very little information about how to write grants. Thus the site assumes that the people interested in grant writing information have experience writing grants. The evaluators felt strongly that OESE should also try to include information which would provide more of a step-by-step approach for grant writing in order to assist less experienced users.

The evaluators also noted that the order of links on each of the programs' introductory pages (e.g. placing the Director link first), did not cater to the needs of non-expert users. Finally, the evaluators noted that the site tended to use terms that assumed a certain level of knowledge regarding agency functions (e.g. 'advance organizer, abstract'). The evaluators suggested that OESE make efforts to simplify language on the site as much as possible.

PURPOSE OF SITE

The evaluators felt the site needed to transition from the current "brochure-ware" orientation to a help orientation. They explained that brochure-ware sites provide information, but little assistance. Additionally, brochure-ware sites tend to provide fairly shallow content. They elaborated that the current site fulfilled its brochure-ware/public record obligations well, but needed to move on and experiment with different help-oriented features such as the grant-writing help, or more extensive FAQ listings.

INCONSISTENCY IN DESIGN

Evaluators approved of the simple and clean designs used on the vast majority of the OESE pages. They found a great deal of inconsistency however, between OESE subsections and suggested that this inconsistency might confuse users.

Furthermore, the evaluators approved of the introductory page developed for each subsection, but felt it often conflicted with or overlapped with the 'About Us' link present on many subsection pages. They agreed that the introductory page clarified the purpose and mission of many of the subsection sites. They made several suggestions however, for further improving the site by maximizing the usefulness of this page. They suggested using this page as an index to the subsection. They also suggested making the icons along the side of the introductory page more noticeable and more consistent with the text based links. Finally, they questioned the need to list the Director link first on the introductory page.

The evaluators also noticed inconsistency between subsections in their ability to provide user feedback or contact OESE officials with questions. Some subsections provided clear and easy feedback options. Others provided feedback options, but buried it within the 'About Us' page. Finally, other subsections did not provide feedback options at all.

SITE EXIT POINTS

The evaluators pointed out that most subsites gave users no warning when proving links to non www.ed.gov sites.

REPORT FORMATS

The evaluators suggested that the OESE staff attempt to move one step beyond posting reports and materials on line and begin html indexing these reports. HTML indexing would allow users to skip immediately to sections of interest without scrolling through an entire document. Furthermore, html indexing would allow users to print out only relevant portions of a document instead of printing out the complete document. Finally, the evaluators suggested that OESE attempt to increase the number of formats for downloaded material. Currently OESE relies predominantly on PDF. The evaluators suggested the goal of making documentation available three formats: PDF, html-indexed and MSWord format.

DATED MATERIAL

The evaluators noted that OESE often dated their on-line material. They suggested OESE attempt to improve by also including a data or report 'expiration date'. The expiration date would indicating how long data/material is good for, allowing users to know how long they could reasonably use this data in a report, and when the next report will become available.

SEARCHING ABILITY

The evaluators could not find an easily accessible searching mechanisms within OESE site.

In summary, the evaluators felt the OESE site had strengths: no over-design or overuse of graphics or animation, and use of concise introductory pages to each subsection. They felt however, that the OESE site needed to evolve to the next level of website design. The site needed to move from 'brochure-ware' to a help orientation.

Many of the themes presented in this subsection apply to all the pages within the OESE site. Appendix V-12 provides verbatim comments from participants for pages examined.

Options for OESE website

Given limited time and resources, the Office of Elementary and Secondary Education has at least three options:

1. Maintain existing website design. OESE could choose to focus resources on programs and services other than the OESE website.
2. Expand the scope of on-line information. Focus energy on getting things on-line that currently are not on-line, or only exist on-line in the tree format (e.g. Impact Aid, Office of Indian Education).
3. Improve the usability of currently existing web pages. OESE could choose to focus its energies on evolving its current pages to a new level of usability through page redesign and usability testing.

If OESE chooses option number three, it may consider any of the following general usability oriented projects suggested by the expert evaluation:

- Clearly identify target audiences, make certain design offers options catering to multiple target audience groups;
- Increase usability for non-experts through increased use of plain language, more help-oriented features (FAQs, grant writing help), more indexing of long lists of links (Goals 2000 and CSRD);
- Increase consistency of design across pages, including clear and easy navigation features;
- Improve visibility and robustness of user feedback features;
- Resolve the introductory page/about us conflict. Maximize utility of introductory page with overviews and indexes;
- Clarify exit points;
- Expand the number of available download formats;
- Expiration date all materials;
- Improve searching capabilities (search feature, A-Z index link);
- Highlight finding aids on OESE homepage (search, A-Z index link, Programs and Services listings).

Implementing any and all of these recommendations has the potential to improve the usability of the OESE website.

OPTIONS FOR WWW.ED.GOV

The study team congratulates the Department on its website. The www.ed.gov site currently serves a large audience and serves it well. The site presents an extensive array of resources to users. These resources are buttressed with several finding aids. As the Department looks to extend its website, it can do so in a number of ways: by extending the site's reach to new audiences, by extending its functionality, and by including new finding tools. The usability assessment points to some areas in which the site can be improved as it continues to grow.

This section presents a series of options that the Department of Education may choose in order to make use of the findings presented in the user-based portion of this study. The section outlines general website usability design approaches which apply to all pages instead of focusing on design issues only applicable to individual pages. The options presented in this section relate directly to the key findings presented at the beginning of Section III. The user evaluation presented five main findings:

- The website www.ed.gov provides a wealth of useful education related information.
- The website is currently structured to best support expert users rather than novices.
- Finding aids are currently not obviously placed for users.
- Users have difficulty judging the relevancy or value of information that might be found via a particular link.
- The website is at the stage of development in which previously existing print content forms the basis for much of the web content. The Department needs to determine to what extent it will the evolution of the site to a true user-oriented site.

The options center around the degree to which the Department wishes to support a website evolution. The Department might choose one of the following options:

- No/Low commitment
- Medium commitment
- High commitment

No/Low commitment

In this scenario, the Department of Education decides not to commit significant resources to manage an organized evolution of the website. Individual POCs may commit resources to website evolvement, leading to a Department of Education website with highly varying levels of webpage sophistication. The Department still maintains and provides high quality on line educational information, but does not commit resources to improving access to that information for non-expert users.

Projects in this scenario might include projects to increase the amount of information available on-line, or improve the speed at which information becomes available. A low commitment project toward website evolvement might consist of highlighting finding aids on the homepage via a "Help" button in the left hand buttons column that links to the search feature, A-Z, other indexes, and organizational charts.

Medium commitment

The medium commitment option would require specific efforts to improve usability for all levels of users across the website. Medium commitment projects might include issuing guidelines for all www.ed.gov pages regarding including:

- Discovery information for all links;
- Further grouping and categorizing listed links on pages;
- Warning users when links will take them off site and including homepage links;
- Links to finding aids on every page
- Reduction of "expert" terminology.

High commitment

A high commitment approach would require significant Department of Education resources for evolution away from current model in which "repurposing" of print content is the primary source of web content. Projects included under this level of commitment would include all the projects listed under the No/Low Commitment model and the Medium Commitment model. In addition, High Commitment projects might include:

- Designing a "New User" button off the main home page which give new users a different and more intuitive interface for the site;
- Designing sub-interfaces or "guides" for major user groups including parents, students and teachers which provide links to the most common resources used by those groups;
- Posting FAQ files for each major page on the site, designing additional help features that assist new users in making use of Department resources (e.g. a how to write effective grants guideline page);
- Offering all long documents in html format with links to sections and subsections to aid browsing;
- Offering all documents in multiple formats.

CONCLUSION

This section presented an overview of the user assessment component of the project. The user assessment found that in general, www.ed.gov provides a wide array of useful information related to educational research, funding, programs and policies. The current website provides good access for experienced users.

Suggestions from the user assessment centered around three main issues: the degree to which the site currently highlights its finding aids, the degree to which the site supported inexperienced, or novice users, and the degree to which the department will commit resources to evolving the site.

Increasing site usability is not easy. Some recommendations are counter-intuitive or in conflict with each other, thus requiring an ongoing investment in usability testing geared to assessing improvement. It will also require the Department to make specific and directed resource commitments. Furthermore, it will require cooperation and coordination between all the disparate organizational entities that influence the content and presentation of www.ed.gov. Given these difficulties, it is tempting to push aside usability concerns. One should not forget however, that the end goal of the website, and of the Department as a whole, is to serve the public. Improving website usability will increase user satisfaction and allow the Department to fulfill its public service obligations.

VI. CONCLUSIONS AND GENERAL RECOMMENDATIONS

The Department of Education's website, www.ed.gov, is a rich information and service resource that is widely used both within the Department and by a variety of users external to the Department. It provides extensive information about the Department and its programs and services, enables users to interact efficiently with some programs (e.g., student financial aid), and serves diverse audiences. It has a rich web policy environment to facilitate Departmental decision-making in support of the development of the website. In relationship to other Federal websites, it is extremely well developed with a set of policies that go far beyond what other agencies typically have developed. But as the website has grown and developed, a number of issues – especially related to management and resource support – require attention.

In recent years, Congress and the Administration have instigated numerous programs and initiatives in electronic information dissemination and in programmatic areas for which the department has responsibilities for implementation and oversight. In this context of significant growth in departmental responsibilities, there have been major demands to both respond to these responsibilities and to provide information and program services via the department's website. The department's efforts to move to a web-based environment is laudable, but it simply cannot maintain this effort without a reassessment of resource support and management structure – especially given the increased program initiatives required by congress and the administration.

KEY FINDINGS

As stated earlier, the Department has quite successfully "grown" its website creating a rich information environment within a rich policy and management context. However, the Department and the website are following a not untypical trajectory for organizational websites, a trajectory that, if continued, will have a number of negative consequences for the website. This trajectory is one in which resources and management structures do not keep pace with the demands made on the website and the staff associated with it. Most critically, the ED website:

- Lacks adequate staffing and resource support for current operations and this condition is likely to worsen dramatically as demands for Internet support grow.

- Is outgrowing the capacity of the current website management structure.

These two issues represent "make-or-break" issues for the website. Without additional resources and a reconsideration of the current management structure, the problems currently experienced will continue and likely grow worse.

In addition to these two critical problems, the website:

- Needs to have expanded ongoing evaluation efforts associated with its use and growth.
- May be attracting users who are not well served by the website structure, organization, or associated finding tools and services.
- Is demonstrating some technical problems (such as non-standard coding, insufficient usage of META tags) which hinder user access.
- Can better incorporate and comply with selected broader Federal policies and regulations.
- Needs to move content beyond the current situation of reusing print content to a customer-centric site, which may present different information in ways that take advantage of the web's capabilities.

These conclusions result from the study team's four-pronged analysis approach, detailed in the previous chapters.

MANAGEMENT AND EVALUATION EFFORTS

The most pressing concern for the Department regarding its website is the imminent outstripping of the capacity of the management structure and resources to meet the demands of the website. The team's evaluation provides a picture of a structure and resource base severely strained by the current demands of the website. As the Department can expect these demands to continue growing, it is obvious that problems identified in this report will be exacerbated and likely other problems will emerge.

The website and its management efforts are severely under-resourced. The study team believes that ED is facing a critical lack of staff in the area of website creation, maintenance, coordination across the various offices, and planning. There are insufficient staff in OERI and also in the Principal Operating Components associated with website activities to attend to website development and management, and these staff need additional training. The current centralized structure has worked effectively for oversight purposes to date, but again, this structure is now creating bottlenecks in website content processing, evaluation, and ongoing planning. Strategic planning activities have fallen by the wayside as staff concentrate on the abundance of day-to-day tasks that must be accomplished to keep the website up and running.

Evaluation efforts have also necessarily remained minimal due to lack of resources. The contractor, while successful in maintaining content on the web, appears not to be fulfilling contractual obligations regarding submission of appropriate reports and data, and has not been evaluated using the performance measures in the contract. Feedback from customers (via the website and other customer service activities), which was extensively used in early planning and design (and the first redesign) stages has not been integrated in a routine way into ongoing site planning activities. The evaluation techniques used in this report can provide the department with strategies that should be incorporated into ongoing website evaluation efforts.

As web-based information services and resources grow throughout the Federal government, it is likely that more policy attention will be given to the role of Federal websites in meeting government-wide information and services dissemination guidelines. Although the Department of Education has clearly been working to integrate Federal policy into its web policies, it will need to continue to monitor policy developments in this area. Compliance with GPRA, EFOIA, records management guidelines, Y2K, and other policy initiatives will likely take on greater importance in the future and will require additional staff support. The Department will need to determine how best to assign responsibilities to insure agency compliance with these guidelines and requirements.

Given these concerns, the Department should:

- Clarify the primary purposes of the website and set priorities for what are the most important activities that should be supported via the website.
- Reassess how website activities are resourced and immediately begin processes to increase that allocation.
- Restructure and examine the responsibilities of key individuals related to the website and develop strategies for eliminating potential bottlenecks and pressure points (specific recommendations are presented in the management section).
- Implement a *program* of ongoing training for staff in basic website skills. (Training is required in the application contractor's contract.)
- Continue and expand log analyses. More sophisticated analysis software can be purchased. Procedures for addressing problems identified in log analysis should be implemented. Strategies to encourage webmasters to review and act upon log analysis reports should be developed.
- Develop mechanisms for routinely integrating feedback from customers.
- Establish responsibilities and procedures to monitor and comply with Federal policies that affect website development and use.
- Develop a policy of ongoing website evaluation.

The Department will continue to develop its web-based presence. It needs now to quickly address problems identified by this report and then to continue to assess how it is organized to support ongoing growth and development. In this process, the department should consider instituting more formal control and oversight over website development.

MOVING TOWARDS A USER-CENTERED SITE

The team's analysis of logs and user assessment point to a site which has highly-used areas, under-used areas, some technical problems which present possible difficulties for users, a number of difficulties related to searching and identifying specific information, and several design aspects that cater to the expert, knowledgeable user but may be less satisfactory to a novice user. This is a not untypical situation for an organizational site of this complexity and age. Most organizations first begin a website by recreating the organization's structure and by providing information in essentially the same format as text-based versions of that information.

To move the Department's website to the next level of evolution requires that the web be perceived as a unique type of information tool that does not need to mimic organizational structure or other information dissemination strategies. By virtue of its ubiquity and its enabling of enhanced access for a diverse set of users, a website needs to shift in focus away from an organization's perception of itself to the customers' perception of it. A user-centered approach to design is necessary.

A user-centered approach would mean that users are more proactively approached to determine their needs (both technical and in terms of information), their perceptions of website organization, terminology, ease of navigation, etc., and that site redesign would explicitly address those perceptions and needs. Additionally, knowledge about how users navigate websites, read online, etc. would be employed. For example, it may be useful to have different approaches to the website for those who are beginners versus those who are more sophisticated in their web skills and/or knowledge of the Department. It may also be important to consider "real time" user support and assistance. These general strategies change a site from one which "mimics" print publications to one that is a user-centered and user-responsive site (see Section III for details).

The Department has already taken a number of steps in this direction. The team's specific recommendations throughout the report and the general ones here should enable the Department to continue in this direction. To move towards a user-centered website, the Department could:

- Explicitly address and specify the purpose(s) and audiences for the website.
- Continue to tabulate the results of the online survey and incorporate mechanisms whereby the results are used by POCs and others to improve the website.
- Establish a team (or several teams) of interested users to provide regular feedback to the website management on the site.
- Undertake additional user studies of site terminology (for example, terms on the A-Z index could be assessed from a user perspective; one source of data are user terms put in on the search engines).

- Integrate website customer service activities with existing customer service activities.

- Continue log analyses practices and extend using software that produces data such as that in Section IV of this report.

- Develop policies/procedures for website content additions that incorporate user-centered research (e.g., on how people read online; typical user technical configurations) and which lead to a consistent "look and feel" as well as consistent content and its organization on the website.

- Develop mechanisms beyond the IWG for the organization that would enable it to move beyond office-level website initiatives.

The study team recognizes that shifting a website to a user-centered approach requires efforts and resources that go beyond the website itself. This process will not be simple or immediate but will require a philosophical shift in the organization that recognizes the increasing dominance of electronic and web-based information services and resources as the medium of choice.

STRATEGIES FOR ONGOING EVALUATION

A purpose of this study was to suggest ways in which the Department can continue a process for regular ongoing assessment of its website. The study team recommends that future assessment efforts continue to incorporate a four-pronged approach that incorporates log and transaction analysis, user assessments, management assessment, and policy assessment. As shown in this report, the combination of these approaches offers a powerful means to provide a comprehensive view for where a Federal website can be improved.

In addition, the study team has provided the Department with detailed assessment techniques and data collection instruments. The appendices provide detailed descriptions of these methods and data collection instruments. Depending on the needs of the Department, the study team believes that many of these techniques and data collection instruments can be replicated or modified for future evaluation efforts. At issue is a commitment of time and resources to engage in such evaluation efforts. Nonetheless, the techniques offered in this report provide a basis for such efforts to be continued and refined.

INCREASING ACCESS TO WEB-BASED RESOURCES AND SERVICES

Clearly, the Federal government will continue to rely on the dissemination of government information and the provision of a range of services via a web and networked environment. Indeed, webmasters may not be able, at this time, to even foresee what those services might entail. The Department of Education has made significant strides in realizing the vision of Vice President Al Gore as quoted in the introduction to this report. That vision, however, requires that Federal agencies rethink how they "do business" and "provide services" in this evolving web environment. Part of this "rethinking" is allocating adequate resources and obtaining staff with the necessary skills to realize the vision.

An issue that all Federal agencies must address is the degree to which they can simultaneously continue traditional information services and resources and move to and expand their web and networked delivery of information and services. In fact, most agencies are now at the point where it is exceedingly difficult to do more with less. The current situation at the Department of Education suggests that for at least the web-based services and resources, the Department will need to commit additional resources to do more. Thus, setting priorities for what traditional services might be dropped or redesigned for a web environment will be a key management task in the future.

Improving the nation's access to and use of Department of Education information, resources, and services, *can* be done via the web environment – indeed, the findings presented in this report show that such is clearly the case. The Department, however, should expect continued significant growth in the nation's use of its web as more people become familiar with web services, more have computers and high-speed access from the home, and as more people *expect* to be able to conduct business via the web. With such rising levels of user demand and expectations, the Department should build on its existing strengths in web-based services and move quickly to respond to the concerns identified in this report.

Appendix Table of Contents

Appendix II-1 Management Focus Interview Guide Questions 1

Appendix III-1 Analysis of Policy Documents 5
Appendix III-2 Implementation Review Checklist 25
Appendix III-3 Sample Implementation Review Grid for OESE 28
Appendix III-4 Web Policy Implementation Findings 31
Appendix III-5 Side by Side Analysis of Web Policy Documents 40

Appendix IV-1 "Log Analysis Tools: Site Server is on the Right Track" 60
Appendix IV-2 Department Path Report 62
Appendix IV-3 Search Form Using GET 75
Appendix IV-4 Search Results Using GET 77
Appendix IV-5 Search Form Using POST 80
Appendix IV-6 Search Results Using POST 82
Appendix IV-7 OESE Pages and Images Not Found 85
Appendix IV-8 Text of Suck.com Publication 89

Appendix V-1 Customer Service Data Collection Forms 92
Appendix V-2 Task Based Evaluation Forms 98
Appendix V-3 Log Files for Task-Based Test 104
Appendix V-4 WebMAC© Scoring Chart 114
Appendix V-5 Buttons Method Forms 116
Appendix V-6 Full Text of Buttons Reactions 121
Appendix V-7 Buttons Evaluation Page Images 131
Appendix V-8 WebMAC© Analysis Template Group 1 132
Appendix V-9 WebMAC© Analysis Template Group 2 134
Appendix V-10 WebMAC© Analysis Template Comparison 136
Appendix V-11 OESE Expert Evaluation Materials 138
Appendix V-12 OESE Expert Evaluation Form 140
Appendix V-13 OESE Evaluation Full Text by Subsection of Website 142

Appendix II-1, Department of Education Management Focus, Interview Guide Questions

Appendix II-1, Department of Education Management Focus, Interview Guide Questions

1. PROVIDE PROJECT DEMOGRAPHIC QUESTIONNAIRE FOR RESPONDENT TO COMPLETE. (INCLUDED IN APPENDIX III MATERIALS)

2. INTRODUCTION TO PROJECT

A team at the School of Information Studies at Syracuse University was contracted to undertake an evaluation of the Department's website(s) (primarily www.ed.gov, and the various office sites) in order to provide a set of recommendations associated with site design and management. Our approach is to investigate the website from a number of perspectives: a user perspective, transaction logging, a policy perspective, and a management perspective. Keith Stubbs identified you as someone who could help us better understand the current management of the site, and would have insight into issues that have surfaced in that management.

Before we begin, are there any questions I can answer for you about the project?

3. THE INTERVIEW

We have some general areas of interest related to website management that we have found useful in previous work. There are probably other aspects that strike you as pertinent, and we are interested in those as well.

A. Website Purpose and Audience

1. What is the purpose of the website?

2. What are the audience groups for the website?

(May also want to get at genesis of website-why was it developed, what planning process what used, Format and organization decisions which were made)

B. Processes for content creation and getting on to web.

1. What is the process for creating content and getting it on the website? Has that changed over the time the website has been in existence? What kind of content/information is presented on the website

(Looking for procedural stages: origin of the data, verification of reliability of data, presentation of data to HTML coders, verification of content once online, etc, what's working in the process, what isn't, policy aspects such as what type of content is allowed) .

2. Describe the management structure surrounding the process described above.

(This may be elicited by the above question. Looking for who does & decides what, was the process the result of planning or did it just evolve, etc.)

3. How does the process of putting content online tie in with other processes of providing content - in print, etc?

(e.g.: Do the online & print content go through the same process, or are they managed separately?)

4. What mechanisms do you have to update content, technical aspects of the site and its content?

C. Feedback and User Questions and Comments

1. What mechanisms are in place to receive feedback (comments or questions) from users or potential users of the websites?

2. Describe the process of dealing with feedback from the website.

(Looking for procedural stages: who receives the feedback, how do they evaluate it, how do good ideas feed into the content provision processes?)

D. Changes Due to Website

1. How have the processes surrounding providing content in print (or other media) changed since the creation of the website?

2. How have the processes surrounding the receipt of feedback from other media changed since the creation of the website?

3. Have there been changes in job responsibilities/organizational structure that are due the website?

E. Evaluation Processes

Do you or does the organization have a model for determining the cost of maintaining the website?

What processes are in place to evaluate the "success" of the website?

What processes are in place to evaluated the "success" of the management of the website?

F. Policy Aspects

What policies in the organization or the Federal Government have helped or hindered website development and maintanence?

What interagency website activities is the agency engaged in?

G. Lessons Learned

What do you feel are critical factors leading to the success of your website?

BEST COPY AVAILABLE

What do you feel is the best balance of technical/organizational/interpersonal skills or expertise needed to develop and operate a comples website?

What is next for the website?

H. Other Issues

Are there other aspects of website planning, management, and evaluation that we should be aware of?

Appendix III-1, Analysis Of Department Of Education Policy Documents

Appendix III-1, Analysis Of Department Of Education Policy Documents

This Appendix is organized by individual policy: each policy will be discussed in terms of each of the analysis criteria which present issues within the policy. However, in the case of the *U.S. Department of Education World Wide Web Server Policy and Procedures*, the analysis was conducted on each of the major sections of the document due to its size and complexity. The sections are identified in the document and in this analysis by roman numeral and section heading. This document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, will be discussed first since the other policies spring from its directives. The version used for this analysis was the Microsoft Word version available for download from the URL below; page numbers referenced in this section come from the printed document.

U.S. Department of Education World Wide Web Server Policy and Procedures
http://www.ed.gov/internal/wwwstds.html

I. Background

Since this portion of the document introduces the body of the document, only minor points merit discussion here. First, the statement "The ED Home Page is the entry point to the official document collection hosted on the ED-WWW Server, and originates at URL: http://www.ed.gov/" may require further clarification. If the documents found through the use of the above URL are the "official document collection," does this actually mean that all documents found on the ED Website are considered "official"? If so, does this have implications for Records Management and for GRS 20?

This section includes a paragraph stating what the *U.S. Department of Education World Wide Web Server Policy and Procedures* is not designed to be (p. 1, paragraph 6):

> This document is not a training document. It is not a complete style guide for composing HTML (hypertext markup language), *nor does it provide a complete checklist of procedures* for project leaders to follow to publish information on ED WWW servers, although certain procedural issues are addressed. (emphasis added)

This initiates the question as to whether this document can (or should) point the reader to where such a checklist does exist. Along this line of consideration, though, this statement possibly contrasts with the fact that later in the document there actually seems to be directions for project leaders to follow in order to publish information on the ED WWW servers. Both the sections titled File Transfer and Posting (p. 32) and Document Submission Policy and Procedures (p. 37) provide activities to be undertaken in publishing documents on the ED WWW servers. This statement may need modification.

II. Definitions

Since this section gives key term definitions, it has not been analyzed according to the criteria outlined above.

III. Administrative Roles and Procedures

Several ambiguous phrases or terms are contained in this section. First, that the ED Webmaster will enforce the Department's standards by "assigning liaisons on an as-needed basis to assist POCs in posting documents to the ED-WWW Server" (p. 3, paragraph 2) presents the question of what qualifies as an "as-needed basis." Is there a set of guidelines which detail what criteria or needs will necessitate the assigning of a liaison?

A duty of each Assistant Secretary is to "ensure that web pages originating from his or her POC receive the proper reviews and approvals" (p. 3, paragraph 5). What are "proper reviews and approvals"? It might be helpful at this point to reference the areas later in the document which will explain the meaning of this statement.

The use of the term "relevant" in the statement "A POC Home Page Editor who will be responsible for compliance with all relevant Departmental WWW standards" (p. 3, paragraph 6) is open to interpretation. Which are the relevant standards and who will decide?

It is not clear what is meant by the POC Home Page Editor responsibility of "organizing. . . main navigational pages" (p. 3, paragraph 6). Does this mean creating links, organizing categories, creating search engines, or perhaps other responsibilities?

One of the duties listed for the Web Publisher is "responding promptly to customer inquiries" (p. 4, paragraph 1). What is considered prompt? Who will decide what is prompt? Who will evaluate and enforce prompt responses?

Gaps in this section are found in the statement: "The ED Webmaster role is shared by the Office of Educational Research and Improvement (OERI) and the Office of the Chief Information Officer (OCIO)" (p. 3, paragraph 1). What are the specific position titles (if not names of people) within OERI and OCIO who share the webmaster role? Is there contact information occurring later in the document which can be referenced at this point?

Further descriptive information would be helpful in understanding what "Topics A-Z and other applications of metadata" (p. 3, paragraph 2) means. Also, further information or a reference to find further information would be helpful in relation to the POC Home Page Editor's duty of "archiving and removing web pages" (p. 3, paragraph 6). What are the guidelines (are there any?) for archiving and removing pages and who decides these guidelines?

This section appears to indicate that the ED Webmaster will enforce the Department's standards by "assigning liaisons on an as-needed basis to assist POCs in posting documents to the ED-WWW Server" (p. 3, paragraph 2). This seems vague. What conditions will trigger the assigning of an liaison? Similarly, the statement "Each Assistant Secretary is to ensure that web pages…receive proper reviews and approvals and meet required technical standards" (p. 3, paragraph 6) is to be done by designating a POC Home Page Editor and a Web Publisher. Will only this designation actually allow the Assistant Secretary to ensure "that web pages…receive proper reviews and approvals and meet required technical standards"? Shouldn't a review or evaluation using specific criteria occur?

It is difficult to tell how the tasks undertaken by the Assistant Secretary, POC Home Page Editor, Web Publisher, and, for that matter, the ED Webmaster will be reviewed and evaluated to ensure compliance with the policies outlined in this section. In fact, a general sense of vagueness pervades this section with regard to the different job titles included in this section, who exactly does what, and the overall relationship of each job title to the others. In order for activities to be accomplished in accordance with the policies in this document it seems that carefully laid out, very clear explanations of who does what and the relationship of each actor to the others should be given.

A process to collect user feedback, undertake modification of the policy, or eliminate the policy was not identified.

IV. A. ED-Controlled Content

The use of the term "organization" in the statement "The content of all pages on ED WWW servers shall be related to the function and mission of the organization" (p. 5, paragraph 1) is not clear. Does this mean the Department of Education or an office within the Department? Also, it would be helpful to reference a place (on the web or in a document) where the function and mission statements could be accessed. In the final sentence of the paragraph, the use of the term "link" raises questions, in light of the sections which follow, of whether what is meant in this instance is specifically an external link.

It is indicated that "Every document (or document collection) must have an E-mail address" (p. 5, paragraph 6). Since documents and document collections were previously defined as separate entities (p. 2), is this meant to be an either/or statement?

"POCs must ensure that all out-of-date information on the Web site is promptly removed, updated, or archived" (p. 6, paragraph 3) may raise the question as to what is considered "out-of-date." While some material would obviously be of no use to users past a certain date, other out-of-date information may retain value. Should further direction be given to this point?

This section does contain very helpful examples which assist clarity: for example, the example of a generic e-mail address (p. 6, paragraph continued from previous page) and the examples in the list of quality assurance methods (p. 6, paragraph 1).

BEST COPY AVAILABLE

Several areas may require more explanation. Remaining on the previous paragraph's topic, it is not clear what sorts of situations the term "policy implications" might include. Provision of an example or reference to guidelines elsewhere might be helpful. The reference to an "advance notice process" (p. 5, paragraph 5) seems to require further explanation. If it is a "process," are there procedures or forms which must be followed or submitted?

The statement regarding the fact that out-of-date information may need to be removed or archived and that the "party responsible for the document or collection should determine whether to retain an electronic version corresponding to the outdated version" (p. 6, paragraph 3) again brings up the question of the possible need for guidelines. What should or can be removed or archived? Is archiving and removal of documents being left solely up to each "party responsible for the document or collection"? Does this support an overall effort by the Department to centralize its operations?

A possible inconsistency exists between the statement that the "central ED WWW server [is] operated by the OCIO" (p. 7, paragraph 3) and the statement that "Internet services will be developed and maintained centrally by OCIO and OERI" (p. 7, paragraph 7). Does only OCIO maintain the ED WWW server? If so, should this be clearly spelled out in section "III. Administrative Roles and Procedures"? If the server is being maintained by both OCIO and OERI, are there coordination issues between the two units which need additional clarification?

There are several enforcement methods indicated in this section. First, text under the Approvals subheader requires that new WWW documents gain approval from the sponsoring POC and from the OPA if policy implications exist. In addition, an approval process for purchasing additional servers is outlined (p. 8, paragraph continued from previous page) to prevent POCs from purchasing servers on their own.

A process to collect user feedback, undertake modification of the policy, or eliminate the policy was not identified.

IV. B. ED-Sponsored Content

Several items which may be ambiguous appear in this section. The text under the subheader Statement of Purpose (p. 8, paragraph 1) is ambiguous in that it does not explicitly state that a statement of purpose is required. Is such a statement required? Next, it is not clear what "coordination of all ED-sponsored pages" (p. 8, paragraph 2) includes. Is this term all-encompassing as far as authoring, posting, and maintaining websites goes or is it more limited? While the policy indicates that the "POC and the responsible Home Page Editor will decide how closely the site needs to be monitored" (p. 8, paragraph 2), who will actually be doing the monitoring? The Home Page Editor? Finally, the policy states that one factor which will contribute to the level of POC monitoring is the "contractor/grantee track record for responsibly managing the site" (p.

8, paragraph 2). How long is the time period for the track record and what specific factors make up the track record?

Further information may be desirable in this section in relation to the provision of an explicit statement regarding the award which funds the project (p. 8, paragraph 1).

Lastly, it seems that the POC and Home Page Editor are responsible for enforcing the policies in this section. Are they? If so, what are the explicit procedures for such enforcement? A process to collect user feedback, undertake modification of the policy, or eliminate the policy was not identified.

IV. C. External Content

This policy contains the statement that the "ED Webmaster reserves the right to approve or disapprove a request to link to non-ED sites" (p. 9, paragraph 1). However, it is unclear whether POCs actually have to make a formal request to link to non-ED sites. If they do, what is the process for such a request? What specific criteria will the ED Webmaster, in consultation with OGC, be using to approve or disapprove link requests? Further, what is the purpose of developing a POC policy for linking to external sites if links must be approved by the ED Webmaster? In addition, the policy directs that prominent disclaimers be displayed in "various locations of the POC web site" (p. 9, paragraph 1). The meaning of "various locations" is ambiguous.

This policy will apparently be enforced by the ED Webmaster in consultation with the OGC (p. 9, paragraph 1). Without detailing the specific criteria which will be used to approve and disapprove links, though, actual enforcement provisions are vague.

Again, a process to collect user feedback, undertake modification of the policy, or eliminate the policy was not identified.

V. Navigation/Organization

This policy appeared ambiguous from an overall standpoint. It was not explicitly clear from the text what the policy actually was. In other words, what exactly is to be done in response to this policy and by whom? Adding to the ambiguity was the use of the term "coordinated" in the statement "ED-sponsored WWW materials must be coordinated with the main ED WWW server" (p. 10, paragraph 3). What activities are included by "coordinated"?

Further information would be helpful in regard to the process for reciprocal linking (p. 10, paragraph 4). How is this accomplished? Who does the linking, who needs to receive the linking information, and is there a notification process for new material which needs to be linked?

In addition, the third paragraph references ED-sponsored WWW materials and does not mention ED-controlled materials. As defined in a previous section, "IV.

Content, " ED-controlled information is that information on WWW servers "operated or directly representing Department offices," while ED-sponsored information is information on WWW servers "operated by or directly representing organizations or individuals under Department funding" (p. 5, paragraph 1). Is the lack of reference to ED-controlled materials in this section material? How will ED-controlled materials be linked with the appropriate pages on the ED WWW server? Should this page reference the Cross-links Table on pages 22 through 24?

There is a slight inconsistency evident in the text of this policy in that while navigation is specifically listed as a Home Page Editor duty previously in this document (p. 3, paragraph 6), no mention of the Home Page Editor is made in this section.

Neither statements regarding how the policy is to be enforced nor how to collect user feedback, undertake modification of the policy, or eliminate the policy were identified.

VI. Compliance Issues

This section contains several examples that contribute to the clarity of the policy. Examples include those web applications which may increase security risks (p. 11, paragraph 6), a sample copyright notice (p. 12, paragraph 4), and examples of identifying information (p. 13, paragraph 1).

Ambiguous phrases occur in a number of places in this policy. First, the POC Home Page Editor and Web Publisher are directed to coordinate with OERI "to ensure proper linkage when. . .substantial changes are made to an existing collection" (p. 11, paragraph 2). What would qualify as substantial changes? In the next paragraph, the policy indicates that POC Home Page Editors and Project Monitors are responsible for the "quality and functionality of their web pages" (p. 11, paragraph 3). What exactly do the terms "quality and "functionality" mean? Definitions of these terms may be helpful.

Similar questions may be asked of the use of "from time to time" in the paragraph indicating that Web Publishers should evaluate the needs of their projects (p. 13, paragraph 2). How often, specifically, should Web Publishers be evaluating such needs? And, what is meant by the use of "appropriate adjustments" in reference to what sort of changes Web Publishers should be making (p. 13, paragraph 2)? Would it be helpful to define what sorts of adjustments Web Publishers should consider?

The paragraph under the subheader Coordination (p. 11, paragraph 2) seems to duplicate the intent of the previous section, "V. Navigation." Yet, this paragraph provides further information to assist in coordination in the form of contact details. Should this have been included in the previous section, "V. Navigation," instead?

Several subsections of this policy, "VI. Compliance Issues," may benefit by some further explanation. For example, the text under the subheader Security/Privacy may be helped by a description of what sort of consultation process is required before using web applications considered security risks (p. 11, paragraph 6). Do the ED Webmaster, Departmental Security and Privacy Act officials, and the POC Home Page Editor *all* need to be consulted before using one of the mentioned web applications? In what order? What information needs to be presented?

Regarding the subsection Government Information Locator Service (GILS) Compliance (p. 12, paragraph 6), it may be useful to provide further brief information in this policy as to when GILS records should or should not be made, what the process is for developing the records, and how the records are submitted and to whom. Perhaps this subsection should reference the appropriate GILS Policy and Guidelines at NARA and on other websites.

The subsection Usage Monitoring (p. 13, paragraph 1) may be enhanced by providing information as to how Web Publishers should review and analyze usage reports, how often usage reports should be analyzed, and with what criteria the reports should be analyzed. Finally, website changes which would qualify as "frivolous and arbitrary" (p. 13, paragraph 4) could be clarified through the provision of examples.

This section may add to the inconsistency of previous information given regarding which Department of Education office is doing what activities. This section, "VI. Compliance Issues," indicates that OERI maintains the ED WWW server (p. 11, paragraph 2). However, it was earlier indicated that: "The ED Webmaster has the primary responsibility for administration of the ED-WWW Internet Server. The ED Webmaster role is shared by the Office of Educational Research and Improvement (OERI) and the Office of the Chief Information Officer (OCIO)" (p. 3, paragraph 1); that the "central ED WWW server [is] operated by the OCIO" (p. 7, paragraph 3), and that "Internet services will be developed and maintained centrally by OCIO and OERI" (p. 7, paragraph 7). Is it reasonable to have these various activities in different offices—are these activities really being performed by different offices—and will other staff understand the different roles?

Another inconsistency arises from the text under the subheader Security/Privacy which indicates that the reader should "see References for requirements and sample disclaimers" (p. 12, paragraph 1) for privacy or security issues. Yet, in the section "VII. References" (p. 14), there appears to be no such information.

Enforcement of this policy, at least with regard to certain web applications which implicate privacy considerations, will be accomplished by the ED Webmaster, Departmental Security and Privacy Act officials, and the POC Home Page Editor. Further enforcement efforts are not explicit.

User feedback and processes for policy modification and policy elimination are not explicitly addressed.

VII. References

The text in this section indicates that the section is "not an exhaustive list" of statutes and issuances which "must be complied with in the collection, dissemination, access, preservation, and privacy of Government information resources" (p. 14, paragraph 1). However, is there an exhaustive list stating exactly what statutes and issuances must be complied with somewhere else? If so, it may be helpful to reference such a list in this section.

The final paragraph states that OMB is "encouraging federal agencies to sue the Web in a manner consistent with the agency's mission. . ." (p. 14, paragraph 3), among other provisions. Is there a statement, guideline, or policy somewhere from OMB which would clearly spell out OMB's requirements or expectations? Reference to such a statement here would be helpful information.

Since this section contains references to statutes, enforcement of these statutes will be contained within their text. There is, however, again no explicit methods for user feedback, policy modification, or policy elimination.

VIII. A. Technical Standards and Guidelines

This section does aid the user's understanding of its directives by the inclusion of several helpful examples which illustrate concepts. For instance: examples of proprietary file formats are given (p. 15, paragraph 3); examples of good URL names are given (p. 17, paragraph 2); and examples of logical and physical tags are given (p. 29, paragraph 4).

Several areas may be helped by further clarification. First, this section states that portable document formats should not be used as the primary format unless "converting the material to HTML is not feasible" (p. 15, paragraph 5). What is the threshold for feasibility in this instance? Are there guidelines as to document length or complexity which would help the user to know when he or she should be converting to HTML? This same question arises later in the directions for proprietary formats: "Proprietary formats. . . should only be used if: (a) conversion to one of the above formats is not feasible" (p. 16, paragraph continued from previous page). Again, what is the threshold of feasibility?

Another paragraph indicates that "Data files shall be accompanied with adequate documentation of the file content and structure" (p. 16, paragraph 2). Without any explicit guidelines, the use of "adequate" is open to subjective interpretation.

Under the subheader File Size a statement directs that "either a PDF or a compressed file in ZIP format should be made available" to users when a document consists of more than ten files (p. 18, paragraph 1). Should the PDF file or compressed file be made *in addition to* or *instead of* the more recommended HTML file (see p. 15, paragraph 4)? It is unclear from the text.

A paragraph under the subheader To Download Files makes a reference to sections titled "File Formats and Large or Complex Documents" (p. 21, paragraph 2). Does this mean, in fact, the subsection titled File Size?

In the paragraph for the subheader Titles, the policy directs that "Every page will have a unique title" (p. 25, paragraph 2). How will anyone know what titles have already been used? Is there a list of all titles employed by ED web pages somewhere which could be referenced here?

The policy under the subheader Accuracy/Code Checking states that document "spelling and syntax should be checked, and the links should be verified" (p. 32, paragraph 2). Whose job is it, specifically, to do these tasks? Further, *should* this be done or *must* it be done? Along the same lines, a later paragraph under the subheader Adding New Files directs that "two hard copies and a disk containing an electronic version" of the document be provided to OERI or the ED Web Contractor (p. 32, paragraph 5). Whose job is it to provide these items?

An apparent contradiction exists between the directive that Zip, Jaz, and SyQuest disk formats are acceptable (p. 33, paragraph continued from previous page) and the later statement that SyQuest cartridges, Jaz and Zip drives, magnetic tape, etc. are to be avoided (p. 38, note 2). It is unclear which format is allowable from these statements. Further, the use of "etc." in note 2 on page 38 introduces ambiguity and should have specific items substituted for it.

The body and intent of the instructions for the subsection File Transfer and Posting (beginning at p. 32, paragraph 5) is very similar to the section "VIII. B. Document Submission Policy and Procedures" (p. 37). It is not clear why these seemingly duplicative policies are offered in separate sections. It may make sense to consolidate these two sections into one, thereby eliminating the possibility for inconsistencies.

Further explanation would be helpful in a number of places. While the policy indicates that the user should "send suggested revisions/additions to the ED Webmaster" (p. 15, paragraph 1), contact information for the ED Webmaster would be helpful.

References are made to "progressive JPEGs" (p. 15, paragraph 4), "self-extracting archive files" (p. 16, paragraph 4), and the "interlacing technique" (p. 28, paragraph continued from previous page). What do these terms mean? Will the average user already know?

The text under the Cross-links Within ED Site subheader speaks to determining when links should be added, revised, or removed (p. 22, paragraph 1). Is there a process for adding, revising, or removing links? Once it is determined that something should be done, who does it?

Reference is made again to keeping an old document online for "archival or reference purposes" (p. 34, paragraph 3). What are the guidelines for deciding whether to keep a document online or to archive it? It would be helpful to reference such guidelines here.

An inconsistency arises in the directions given for the presentation of e-mail addresses for users to contact the Department. First, in section "IV. A. ED-Controlled Content," it is stated that "Every document…must have an e-mail address or link to an e-mail form" (p. 5,paragraph 4). Yet in the section currently being analyzed, there is text stating that "Mailto links will be used to route e-mail to Department mailboxes" (p. 21, paragraph 1) and later that every document will include a standard footer having an "e-mail address or initials of responsible party with mailto link" (p. 25, paragraph 8). Should all web pages have mailto links or is it acceptable for them to only have e-mail addresses?

This section, "VIII. A. Technical Standards and Guidelines," also does not include any reference to the need to submit the form "Request to Post Files on ED WWW Site." Later, in section "VIII. B. Document Submission Policy and Procedures," the submission of this form is indicated as necessary.

The subheader References (p. 35) contains references to documents and their URLs. The first document referred to, *World Wide Web Federal Consortium Home Page Guidelines and Best Practices*, gives a URL (http://skydive.ncsa.uiuc.edu/cybrary/2/guidelines) which still exists but contains out of date information. The "official" version of this document now resides elsewhere and may soon be updated further. There is no indication at the address above that the official document is now elsewhere. ED is then linking to an older version of the document that no longer matches the current version of the document.

This will likely be a problem for federal agencies in general. There is currently no real guidance as to when federal agency web pages can or should be removed and there seems to be a tendency to leave items in place even when they are no longer current. This tendency works at cross-purposes with the need to maintain the most up-to-date information possible. One agency might link to another agency's old information without ever realizing that this information is no longer current. As long as the URL continues to function, and there is no indication on the old page that it is no longer current, how will federal agency webmasters know for sure that all their links are up-to-date?

There are no explicit statements indicating how any of the policies contained within this section will be enforced. For instance, the use of client-specific markup is prohibited (p. 29, paragraph 2), but who is going to check to make sure this is adhered to? Later it is directed that pages be tested using Lynx and validated using Bobby (p. 30, paragraph 8). Who needs to know that this has been done and how will they know? These are just a few examples which illustrate the lack of enforcement present in this policy.

There is an explicit solicitation for user feedback in this document: "Please send suggested revisions/additions to the ED Webmaster." (p. 15, paragraph 1). However, it may be helpful to indicate in the paragraph on "Dead Links" (p. 24, paragraph 1) that feedback should be solicited from the external users of the website on this issue.

VIII. B. Document Submission Policy and Procedures

This section is very similar to the previous subsection, File Transfer and Posting (p. 32, paragraph 5) with the exception that "VIII. B. Document Submission Policy and Procedures" is more detailed. Which is to be followed exactly? Duplicating procedures leaves room for ambiguities and inconsistencies to arise. For example, this section does not mention the need to submit two hard copies and a disk of the material to be posted to a website which was required in the subsection File Transfer and Posting (page 32, paragraph 5). This is problematic.

Again, there are no specific enforcement guidelines in this section, neither are there guidelines as to how the policies in this section can be commented on, modified, or eliminated.

ED-WWW Server and Site Problems Customer Support Process
http://inet.ed.gov/internal/customer.html
http://inet.ed.gov/offices/OCIO/internet/inet5.html

This policy is straightforward and is unambiguous. It contains a specific example of an e-mail acknowledgement to a complainant, aiding in its understandability. The version at <http://inet.ed.gov/offices/OCIO/internet/inet5.html> also contains a mailto link for question, comments, and suggestions, facilitating user feedback. There are, however, no statements as to how directives contained in this policy will be enforced or by whom they will be enforced.

Establishing Links to External Organizations
http://www.ed.gov/internal/xtrnlink.html

Several portions of this policy contain ambiguous wording. First, the statement "If the Department's main page of links to external sites is not used, collections of links to external sites shall be accompanied by a statement of the scope of the collection and the *criteria for its inclusion*" (emphasis added, paragraph 5) is awkward wording. Does the italicized portion of this sentence actually mean "the criteria by which external links are evaluated for inclusion"?

Paragraph 5 also contains the text, "Unless the stated scope and criteria are well-defined and limited, the sponsor has no grounds for refusing such requests." Are there guidelines as to what would be considered "well-defined and limited?" These terms seem to be open to interpretation.

In paragraph 7, the policy states that "The collections provided at http://www.ed.gov/EdRes/ should be provided as gateways for our customers to non-Ed sources of information." Does this mean that all document collections should provide links to this other page? This paragraph continues and makes a reference to the "Department's 'Other Sites' page." Is "Other Sites" the title of the page that will be found at the URL <http://www.ed.gov/EdRes/>? This policy would be clearer if the meaning of "Other Sites" was made explicit.

Finally, the policy contains the statement, "The IWG shall reserve the right to review proposed external link collections before they are implemented" (paragraph 8). Is there a process by which external link collections need to be submitted to the IWG for such a review? Is there a specific time period for this submission and review?

This policy contains several statements which seemingly contradict policies in the *U.S. Department of Education World Wide Web Server Policy and Procedures*. First, the policy *Establishing Links to External Organizations* directs that "When external links appear on a page but are not its major focus, the standard *Disclaimer icon* shall appear next to each external link or group of links; the icon shall link to the disclaimer statement at http://www.ed.gov/disclaimers/exit.html" (emphasis added, paragraph 3). The main ED policy document, however, states "When external links appear on a page but are not its focus, the standard *Exit icon* (http://www.ed.gov/disclaimers/exit.gif) shall appear next to each external link or group of links. The icon shall link to the disclaimer statement at http://www.ed.gov/disclaimers/exit.html" (emphasis added, p. 20, paragraph 3). It seems that individual policies should be consistent with the main policy document, not the other way around, and that the icon referred to in *Establishing Links to External Organizations* should actually be the Exit icon.

Another apparent contradiction arises in this policy's statement "The IWG shall reserve the right to review proposed external link collections before they are implemented" (paragraph 8). Yet the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, states "The ED Webmaster reserves the right to approve or disapprove a request to link to non-ED sites in consultation with OGC" (p. 9, paragraph 1). Who is actually reviewing external links—the IWG or the ED Webmaster, in consultation with OGC?

Inconsistencies also occur in this document in relation to the main policy document. This policy directs that for pages whose major purpose is to link to external sites, the standard Disclaimer of Endorsement statement (http://www.ed.gov/disclaimers/endorse.html) shall be included on the page (paragraph 3). However, the *U.S. Department of Education World Wide Web Server Policy and Procedures* indicates: "Pages whose focus is linking to external sites shall include *or link* to the text of the standard Disclaimer of Endorsement statement (http://www.ed.gov/disclaimers/endorse.html) (p. 20, paragraph 3). Is the Disclaimer of Endorsement statement to be included or can it be linked to?

Next, *Establishing Links to External Organizations* provides the option of using the Department's scope and criteria statement: a "scope and criteria statement for the Department's main collection of links to external sites (http://www.ed.gov/EdRes/) is available at http://www.ed.gov/EdRes/edrespol.html" (paragraph 4). If this is not used, then the "collections of links to external sites shall be accompanied by a statement of the scope of the collection and the criteria for its inclusion" (paragraph 5). This option is not given in the *U.S. Department of Education World Wide Web Server Policy and Procedures*. Here it is indicated only that "a statement of the scope of the collection of external links and the criteria for inclusion" shall be given (p. 20, paragraph 3). If there is to be an option of linking to a general ED scope and criteria statement, shouldn't this option be contained in the main policy document?

Finally, the *U.S. Department of Education World Wide Web Server Policy and Procedures* states that "The decision to include a link to an external source should be based on the statement describing the purpose of the document collection" (p. 9, paragraph 1). There is no such explicit statement in *Establishing Links to External Organizations*. It seems important to indicate explicitly what linking decisions should be based upon.

Interestingly, *Establishing Links to External Organizations* seems to expand the basic directives of the main policy document with no evidence of explicit support for such expansion from the main document. For example, *Establishing Links* states, "As such, POC Web Publishers and Home Page Editors shall rely upon the Department's centrally maintained collections of links wherever possible, rather than compiling similar lists of links which may be duplicative, incomplete, and less accurate than the centrally-maintained Master lists" (paragraph 7). No such directive was found in the *U.S. Department of Education World Wide Web Server Policy and Procedures*. It does not seem like a sound rationale to allow policies deriving from a main policy document to go further than the original document.

Other examples of this occur in *Establishing Links*. For instance, there is the statement "If the IWG decides that the proposed collection should not be supported by the Department's core funding, the sponsoring organization may choose to pay for the effort with its own funds, either through the central contract or other means" (paragraph 8). No such directive was found in the *U.S. Department of Education World Wide Web Server Policy and Procedures*. Also, *Establishing Links* states, "The collections provided at http://www.ed.gov/EdRes/ should be provided as gateways for our customers to non-Ed sources of information" (paragraph 7). No such directive was found in the *U.S. Department of Education World Wide Web Server Policy and Procedures*.

Although it is understood from this policy, *Establishing Links*, that the IWG will review proposed link collections, this enforcement process is not detailed or specific. In addition, although there are hyperlinked initials in the web page's footer, there is no explicit request for user feedback or explicit process in which this policy can be modified or eliminated.

Collection Scope and Criteria for Inclusion on Main ED Page of Links to Other Online Educational Resources

http://www.ed.gov/EdRes/edrespol.htm

This policy is for the most part clear and unambiguous. Language which could possibly be construed in multiple ways is the term "authoritative" which appears in "overall quality and authoritative value of the website" (paragraph 5) and later under the subheader General Catalogs and Subject Trees on Education in reference to "authoritative Web collections." What exactly qualifies as "authoritative"? Is there a generally accepted definition of this term somewhere?

The criteria for evaluating websites of external organizations appear subjective and rather vague (paragraph 5). For instance, what does "overall quality and authority" mean exactly? What qualifies as relevant and useful content? To what degree does a proposed link's material have to complement existing information? And, who is judging this? The ED Webmaster, the responsible ED Office (POC Home Page Editor), or someone else?

In addition, this policy makes the assertion that "ED will not link to sites that exhibit hate, bias, or discrimination" (paragraph 6). However, is it clear whether everyone has the same idea as to what constitutes hate, bias, or discrimination? Do further references exist which could clarify what materials qualify as exhibiting hate, bias, or discrimination?

This policy seems to contradict earlier directives regarding who will approve or disapprove external links. Here, in *Collection Scope and Criteria for Inclusion on Main ED Page of Links to Other Online Educational Resources*, the policy says that "ED reserves the right to deny or remove links" (paragraph 6). In *Establishing Links to External Organizations*, the policy directs that "The IWG shall reserve the right to review proposed external link collections before they are implemented" (paragraph 8). In the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, the policy states that "The ED Webmaster reserves the right to approve or disapprove a request to link to non-ED sites in consultation with OGC" (p. 9, paragraph 1). Evidence of these contradictions in two policies which should spring from the main policy document indicate that care should be taken to ensure that all later policies are consistent with the main policy document.

An apparent inconsistency within this policy, *Collection Scope and Criteria for Inclusion on Main ED Page of Links to Other Online Educational Resources*, arises between the indication in paragraph 3 that links can be made to "national and state education agencies and associations" and the statement under the subheader National Educational Associations and Organizations that "ED does not link directly to local and state associations or organizations." It appears that the language in paragraph 3 should be clarified to read "national education agencies and associations and state education agencies."

There are no explicit enforcement statements contained within this policy. Also, although there are hyperlinked initials in the web page's footer, these initials do not explicitly request user feedback. There is no explicit manner in which this policy can be modified or eliminated.

Disclaimer of Endorsement

http://www.ed.gov/disclaimers/endorse.html

Disclaimer of Endorsement contains text which is to be used in specific instances specified in other policy documents: for example, *Establishing Links to External Organizations* (http://www.ed.gov/internal/xtrnlink.html)and *U.S. Department of Education World Wide Web Server Policy and Procedures* (p. 20, paragraph 3) both reference this document.

The text of the *Disclaimer of Endorsement* is clear, unambiguous, and does not seem to present any contradictions or inconsistencies. There is no enforcement necessary with this document. No modification or feedback options are present, although it may be helpful to include them.

Copyright Status Notice

http://www.ed.gov/disclaimers/copyright.html

Several aspects of this notice raise questions. First, the text of this notice contains the statement, "Click on the 'Back' button on your browser to return to the page with an external link and then click on the text link to follow it." However, it is not clear that all users arriving at this page would have come from a page with the possibility to follow an external link. Couldn't this notice appear on any ED pages?

It is also unclear as to when and where this notice should be used. In the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, the concept that ED material is not copyrighted is discussed (p. 12, paragraph 3), but no mention is made of using a notice like the one here. The main policy document needs to contain a specific statement referencing this document and explicit indications as to when it should be used.

No modification or feedback options are present, beyond hyperlinked initials in the web page's footer, although it may be helpful to users to include such options.

Privacy and Security Notice

http://www.ed.gov/disclaimers/privacy.html

At the bottom of the page of this notice italicized text contains the statement, "Click on the 'Back' button on your browser to return to the page with an external link and then click on the text link to follow it." However, it is not clear that all users arriving at this page would have come from a page with the possibility to follow an external link. For instance, it is possible to access this page via the link "Disclaimers and Notices" on the ED home page (http://www.ed.gov). Therefore, if the user clicked the back button having come from the ED home page, the reference to an external link would not make sense.

This notice also contains the text "Information presented on the WWW site is considered public information and may be distributed and copied" (paragraph 2). However, this duplicates material in the *Copyright Status Notice* (http://www.ed.gov/disclaimers/copyright.html). In addition, this statement does not seem to fit with the context of this notice, which is privacy and security not copyright issues.

It may be helpful to users to provide more information through this document in the form of hyperlinks. For example, could a link be provided for the user to the pertinent portion of the National Archives and Records Administration General Schedule 20? Could links be provided to the Computer Fraud and Abuse Act of 1986 or other pertinent websites related to security and privacy policy?

Also, the notice states that "The Department posts a Privacy Act notice at those places on this Web site. . . where ED needs to collect any individually identifiable information" (paragraph 5). It may be helpful to provide the text or icon of the actual notice in this document so the user will know exactly what to expect or look for.

In addition, as in the case of the *Copyright Status Notice*, there is no clear reference in the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, as to when and where the *Privacy and Security Notice* should be used. In the main policy document under the subheader Security/Privacy (p. 12, paragraph 1) the policy states that certain web applications will need to have: "appropriate warnings, disclosures and/or disclaimers [] openly displayed." A reference should be made at this point in the main policy document to this specific document, *Privacy and Security Notice*, and guidelines should be given in the main document for the notice's use.

There are no enforcement statements attached to this notice since it is a notice and not a policy. There is an explicit statement which solicits user feedback and includes a mailto link.

http://inet.ed.gov/offices/OCIO/internet/inet1.html

The text contained in this document is informational and provides links for further information. This document is therefore not policy in the sense understood here and does not lend itself to analysis.

Guidelines for Reviewing ED Web Sites
http://inet.ed.gov/offices/OCIO/internet/inet7.html

There is no explicit reference in the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, which provides for this type of review. *Guidelines for Reviewing ED Web Sites*, however, contains directions as to how the policies in the main document will be enforced. A reference in the main document to this policy, *Guidelines for Reviewing ED Web Sites*, should be made.

Guidelines for Reviewing ED Web Sites does contain a statement soliciting user feedback along with a mailto link.

Review Checklist

http://inet.ed.gov/offices/OCIO/internet/inet8.html

The Review Checklist contains minor examples of ambiguous language. First, paragraph 1 states that "ED sites should be reviewed frequently" and paragraph 3 indicates that information on main web pages should be reviewed "regularly." How often is frequently and regularly? It would reinforce the concept to state explicitly here how often web pages should be reviewed, especially since *Guidelines for Reviewing ED Web Sites* indicates that websites should be reviewed at least semi-annually. Also, the policy states that "open-standard" HTML is to be used for coding web pages (paragraph 7). What does this term mean?

Page references in the *Review Checklist* back to the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, do not match the actual pages of the main document. For example:

- Links to E-mail addresses is discussed in the main document on pages 5 and 21
- Timeliness/Currency of ED-controlled content: page 6
- Principal Office Home Pages, Program and Project Home Pages: page 7
- Links to Home Page: page 20
- Navigation/Organization: page 10
- Cross-links within ED Site: page 22-24
- Accessibility: page 11
- Considerations for Users with Disabilities, Character-only, or Low-Bandwidth Access: page 30
- Section VIII. Technical Standards and Guidelines: page 15-32
- Client Feature Variations, Client-Specific Markup: pages 28-29
- External Content: Approval, Context: pages 8-9
- Approvals for ED-Controlled Content: page 5
- Approvals for ED-Sponsored Content: page 8
- Copyright and Fair Use: page 12

Another inconsistency arises from the statement directing the reviewer to verify that "There is an E-mail link ('mailto') on the main pages of a *document collection*" (emphasis added, paragraph 2). The *U.S. Department of Education World Wide Web Server Policy and Procedures* contains the statement, "Every *document* (or document collection) must have an *E-mail address* or link to an E-mail form" (emphasis added, p.

5, paragraph 6). The policy statements within this document, *Review Checklist*, must be consistent with the main policy document.

Another example of inconsistency between this document and the main policy document exists. The statement in the *Review Checklist* directing reviewers to check that "All pointers to external sites are. . . consistent with the communications goals of the Department" (paragraph 9) is not consistent with the statement in the *U.S. Department of Education World Wide Web Server Policy and Procedures* that "The decision to include a link to an external source should be based on the statement describing the purpose of the document collection (see IV. A.)" (p. 9, paragraph 1). The language for a policy which appears in multiple documents must be consistent and should rely on the language contained in the main policy document.

Since the purpose of this document is enforcement, this criterion is well discussed here. Also, questions, comments, and suggestions are solicited and a mailto link is provided for this purpose.

Procedure: Request for New External Web Server/Site
http://inet.ed.gov/offices/OCIO/internet/inet3.html

One apparently ambiguous statement in this policy ensues from the statement that proposals be submitted to allow IWG members "sufficient turnaround time" for review of the proposals (paragraph 5). Similarly, "adequate lead time is necessary so that principal offices can work with the Office of Educational Research and Improvement" (paragraph 5). Exactly how much time is indicated by these two phrases?

In addition, there is no explicit reference in the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, to this document. A reference should appear in the main document since *Procedure: Request for New External Web Server/Site* fleshes out the policy contained in the main policy document.

This policy will apparently be enforced by IWG representatives and the IWG. Questions, comments, and suggestions are solicited for this policy and a mailto link is provided for this purpose.

Form: Request for New External Web Server/Site
http://inet.ed.gov/offices/OCIO/internet/inet4.html

This is a form which is to be submitted when requesting new external web servers or sites. The one ambiguity which may exist within this document is the use of "SOW" in the last sentence. Should this acronym be spelled out?

This document is a form, not a policy, and therefore cannot be analyzed in the manner undertaken here.

Decision Memo-Centralized Management of Web Servers
http://inet.ed.gov/offices/OCIO/it/it4.html

It appears that the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, may be enhanced by including a new link at page 8 to this document, *Decision Memo-Centralized Management of Web Servers*. Since the language in the main policy document duplicates that of the *Decision Memo-Centralized Management of Web Servers*, it must have originated from this document. Providing a link in the main policy document to *Decision Memo* would provide added context for the policy.

From the statement, "ITIRB requested regular reports from the Deputy Chief Information Officer on the implementation of this policy and on the need for any modifications" (paragraph 6) it appears that overall enforcement of this policy will be conducted by the Information Technology Investment Review Board (ITIRB), although the IWG will enforce the exceptions process.

Two places are given for user feedback to be collected in this document. There is the standard mailto link in the footer which solicits questions, comments, and suggestions. There is also, however, an explicit statement in the body of the policy, "If you have any questions, or require additional information, please contact Gloria Parker, at 401-3200" (paragraph 8). This serves to explicitly and specifically invite user feedback.

Exit Icon Disclaimer
http://www.ed.gov/offices/OCIO/exit.html

An inconsistency exists with regard to the *Exit Icon Disclaimer*. While the main policy document, *U.S. Department of Education World Wide Web Server Policy and Procedures*, refers to the existence of the Exit icon (p. 20, paragraph 3), there is no reference either in the main document or at *Establishing Links to External Organizations* (http://www.ed.gov/internal/xtmlink.html) as to when the text contained at <http://www.ed.gov/offices/OCIO/exit.html> should be used. Specifically, when is this disclaimer to be used?

Appendix III-2, Implementation Review Checklist

Appendix III-2, Implementation Review Checklist

User Friendliness

- Majority of pages include no more than 1½ screens of text
- Includes link(s) to main ED site, main ED site program index, principal office site(s), organization/program/project site(s), document/collection home page(s) as appropriate, depending on level of page in the organization of the site
- Includes text equivalent for all information contained in graphics; includes ALT text for graphics
- Includes no-frames alternative to frames
- Includes alternatives to online interactive forms
- The links work
- File format matches the intended usage (used online, offline print or display, offline analysis or manipulation); proprietary or unusual formats are explicitly noted; formats other than HTML are linked to an HTML page which describes the material in such a way that users of site-wide full-text search facilities can find material of interest
- Files to be downloaded to a user's machine use HTTP protocol; files larger than 500K are compressed in ZIP format and accompanied by an uncompressed ASCII file which describes contents and provides instructions for uncompressing; data files are accompanied by and ASCII or PDS document which provides adequate documentation of the file content and structure
- Documents larger than 10 screens are divided into multiple, smaller files along logical break points.
- Multifile documents have appropriate table of contents (index.html) page; multifile documents of more than 10 files will be available for download as PDF file or ZIP file
- Links to PDF files are accompanied by link(s) to Adobe Acrobat viewer
- PDF Files larger than 500k are broken down into sections
- Links to ZIP files are accompanied by link(s) to standard directory containing zip utility software and instructions (gopher://gopher.ed.gov/11/info/utilities/)
- Links to executable programs are accompanied by appropriate instructions and specifications
- Includes standard navigational buttons where appropriate
- Visibility -- text colors can be read against the overall page background; consecutive links are visually separated by dividing character(s)

Other

- URL naming convention is followed in terms of case (lower/upper)
- Organization, program, or project sites contain a specific statement describing the purpose and content of the document collection.

- Pages whose focus is linking to external sites include or link to 1) the text of the standard Disclaimer of Endorsement statement and 2) a statement of the scope of the collection of external links and the criteria for inclusion.
- Includes no obvious spelling errors
- Includes no obviously out-of-date information
- Includes e-mail address(es)/generic e-mail address(es) where appropriate
- Icons used for the main ED home page appear to be the standard icon (EDhome.gif)
- No personal home pages are found
- Documents include the standard footer [last update date, e-mail address or initials of responsible party…and link to an appropriate home page (for the document, collection, project, program, organization or Department)]
- Copyrighted material includes notice of reprint permission in appropriate format

Appendix III-3, Sample Implementation Review Grid for OESE

Appendix III-3, Sample Implementation Review Grid for OESE

User Friendliness	**URL: http://www.ed.gov/offices/OESE/**
Majority of pages include no more than 1½ screens of text	0/1 (3+ screens)
Includes link(s) to main ED site, main ED site program index, principal office site(s), organization/program/project site(s), document/collection home page(s) as appropriate, depending on level of page in the organization of the site	1/1 (but links to programs are 1 or more levels down)
Includes text equivalent for all information contained in graphics; includes ALT text for graphics (ALT Text can be verified by Doctor HTML)	1/1
Includes no-frames alternative to frames	N/A
Includes alternatives to online interactive forms	N/A
The links work (Can be verified by Doctor HTML)	1/1
File format matches the intended usage (used online, offline print or display, offline analysis or manipulation); proprietary or unusual formats are explicitly noted; formats other than HTML are linked to an HTML page which describes the material in such a way that users of site-wide full-text search facilities can find material of interest	1/1
Files to be downloaded to a user's machine use HTTP protocol; files larger than 500K are compressed in ZIP format and accompanied by an uncompressed ASCII file which describes contents and provides instructions for uncompressing; data files are accompanied by an ASCII or PDF document which provides adequate documentation of the file content and structure	N/A
Documents larger than 10 screens are divided into multiple, smaller files along logical break points.	N/A
Multifile documents have appropriate table of contents (index.html) page; multifile documents of more than 10 files will be available for download as PDF file or ZIP file	N/A
Links to PDF files are accompanied by link(s) to	N/A

Adobe Acrobat viewer	
PDF Files larger than 500k are broken down into sections	N/A
Links to ZIP files are accompanied by link(s) to standard directory containing zip utility software and instructions (gopher://gopher.ed.gov/11/info/utilities/)	N/A
Links to executable programs are accompanied by appropriate instructions and specifications	N/A
Includes standard navigational buttons where appropriate	N/A
Visibility -- text colors can be read against the overall page background; consecutive links are visually separated by dividing character(s)	1/1
Other	
URL naming convention is followed	1/1
Organization, program, or project sites contain a specific statement describing the purpose and content of the document collection.	N/A
Pages whose focus is linking to external sites include or link to 1) the text of the standard Disclaimer of Endorsement statement and 2) a statement of the scope of the collection of external links and the criteria for inclusion.	N/A
Includes no obviously out-of-date information	1/1
Includes e-mail address(es)/generic e-mail address(es) where appropriate	Yes - initials, Questions & Comments
Icons used for the main ED home page appear to be the standard icon (EDhome.gif)	0/1 (edhome.gif instead)
No personal home pages are found	True
Documents include the standard footer [last update date, e-mail address or initials of responsible party…and link to an appropriate home page (for the document, collection, project, program, organization or Department)]	1/1
Copyrighted material includes notice of reprint permission in appropriate format	N/A

Note: The numbers in the right-hand column represent the ratio of the number of pages in compliance to the number of pages viewed (# in compliance/# viewed).

Appendix III-4, Web Policy Implementation Findings

Appendix III-4, Web Policy Implementation Findings

Any implementation review checklist items that are not mentioned below were either found to be in compliance or were not relevant.

OESE

http://www.ed.gov/offices/OESE/

Among the sites reviewed for this analysis, the Office for Elementary and Secondary Education (OESE) clearly has the largest, most developed site. The biographical page for Assistant Secretary Gerald N. Tirozzi (http://www.ed.gov/offices/OESE/tirozzi.html) is one of the few that includes a link to the office home page. OESE has done a very good job of cross-linking to other sites within the Department of Education:

- http://www.ed.gov/offices/OESE/program.html links to http://www.ed.gov/offices/OUS/title1.html
- http://www.ed.gov/offices/OESE/CEP/info.html links to http://www.ed.gov/offices/OUS/us98.htm

There were also a number of problems found with certain OESE pages:

- Many pages are longer than 1.5 screens
    - OESE Home page at http://www.ed.gov/offices/OESE/index.html
    - *Programs and Funding* at http://www.ed.gov/offices/OESE/program.html
    - *Technical Assistance* at http://www.ed.gov/offices/OESE/asst.html
    - *Migrant School Locator Demonstration Project* at http://www.ed.gov/offices/OESE/MEP/PrelimGuide/locator.html
    - *Office of Migrant Education: Grants* at http://www.ed.gov/offices/OESE/MEP/grants.html
    - *Compensatory Education Programs: Grants & Eligibility* at http://www.ed.gov/offices/OESE/CEP/grant_eligibilty.html
- In general the links between pages are good, but problems were found with pages for Goals 2000 (http://www.ed.gov/G2K/) and Chief of Staff Sarah Lisenby (http://www.ed.gov/offices/OESE/lisenby.html) which link back to the ED home page, but not to the OESE home page.
- Other problems with links were found in the form of a lack of integration of the fairly new School Improvement Programs web site with the rest of OESE.

  - The School Improvement Programs web site (http://www.ed.gov/offices/OESE/SIP/) includes a page for the Magnet Schools Assistance Grant Program (http://www.ed.gov/offices/OESE/SIP/magnet.html)

  - OESE links to a similar page at a different URL (http://www.ed.gov/offices/OESE/magnet/msap.html).

- The ESEA Discussion Forum documents are longer than 10 screens:

  - *Bilingual Education and Minority Languages Issues* at http://www.ed.gov/offices/OESE/ESEA/eseobmla.fnl.html
  - *Equity Issues* at http://www.ed.gov/offices/OESE/ESEA/eseaqty.fnl.html
  - *Secondary School Reform* at http://www.ed.gov/offices/OESE/ESEA/eseahigh.fnl.html

- The Standards Assessment document (http://www.ed.gov/offices/OESE/StandardsAssessment/) consists of more than ten files, but does not appear to be available as a PDF or Word document for downloading to the user's machine.

- The "Up" icon from the Standards Assessment document (http://www.ed.gov/offices/OESE/StandardsAssessment/) takes the reader back to OESE rather than the table of contents for the Standards Assessment document.

- *Comments Requested on Draft Consolidated Performance Report Under OMB Review* (http://www.ed.gov/offices/OESE/webpara2.html), found on the *What's New* Page (http://www.ed.gov/offices/OESE/news.html), includes a link to a PDF document (http://www.ed.gov/offices/OESE/consol7.pdf) but does not contain a link to the Adobe Acrobat reader.

- The focus of the "Hot Topics" page (http://www.ed.gov/offices/OESE/hot.html) is providing external links, but no disclaimer is included or linked from this page.

- Out-of-date information was found in the Events Archive (http://www.ed.gov/offices/OESE/events_archive/), where the 1997 meeting registration form is still available as a link.

- A number of the pages reviewed in the OESE site contained no contact information in the form of an e-mail address.

  - *Technical Assistance* at http://www.ed.gov/offices/OESE/asst.html
  - *Technical Assistance: Regional Service Teams* at http://www.ed.gov/offices/OESE/rsertem.html
  - *Technical Assistance: Policy Guidance* at http://www.ed.gov/offices/OESE/policy.html

- Documents found in OESE include the standard footer, but generally do not include mailto links on the initials found.
  - *Comments Requested on Draft Consolidated Performance Report Under OMB Review* at http://www.ed.gov/offices/OESE/webpara2.html
  - *Magnet Schools Assistance Grant Program for FY 1998* at http://www.ed.gov/offices/OESE/SIP/magnet.html
  - *Calendar of Events* at http://www.ed.gov/offices/OESE/calendar.html
- The School Improvement Programs page at http://www.ed.gov/offices/OESE/SIP/programs/ is very poorly designed.

The OESE web site is very large with a lot of web pages, many of which have problems as shown above. However, the OESE site is also the largest site reviewed. Though problems were found, there are many more pages which do comply with the guidelines.

Other Findings

The findings in this section are based on reviews of four additional offices, including the Office of Legislative and Congressional Affairs, the Office of the Under Secretary, the Office of Management and the Office of Civil Review.

Office of Legislative and Congressional Affairs (OLCA)
http://inet.ed.gov/offices/OLCA/

In general, the pages in this web site are compliant, but a few problems were noted. Many pages are longer than 1.5 screens:

- *OLCA Home Page* at http://www.ed.gov/offices/OLCA/
- *Education Legislation* at http://www.ed.gov/offices/OLCA/legislation.html
- *Testimony* at http://www.ed.gov/offices/OLCA/testimony.html
- *Budget Appropriations Bill* at http://www.ed.gov/offices/OLCA/budcha1.html

Some problems were noticed with links. Pages that don't link back to OLCA but should include:

- The biographical page for Assistant Secretary Scott Fleming (http://www.ed.gov/offices/OLCA/fleming.html)
- The 5/08/98 letter from Scott Fleming (http://www.ed.gov/offices/OLCA/eoz2.html)

Letters from Secretary Riley that are dated between June 4, 1998 and June 9, 1998 all seem to have incorrect document titles (i.e. HTML titles) reflecting the same incorrect date of 97/06/16. The title shown for each letter is *97/09/16 -- Letter from Secretary Riley to Members of the House of Representatives on efforts to block grant education funds*:

- http://www.ed.gov/offices/OLCA/jun041ltr.html
- http://www.ed.gov/offices/OLCA/jun06ltr.html
- http://www.ed.gov/offices/OLCA/jun08ltr.html
- http://www.ed.gov/offices/OLCA/jun09ltr.html

It appears that each letter is created by editing a copy of another letter, but the author has forgotten to update the document title in each case. All other Implementation Review Checklist items were found to be either in compliance or not relevant.

Office of the Under Secretary (OUS)
http://www.ed.gov/offices/OUS/

In general, the pages in this web site are compliant, but a few problems were noted. The majority of pages are longer than 1.5 screens:

- *Summary of the 1999 Budget* at http://www.ed.gov/offices/OUS/Budget99/BudgetSum/pages/sum-1.html
- *About Us* at http://www.ed.gov/offices/OUS/about.html
- *The Federal Budget Process* at http://www:ed.gov/offices/OUS/budpro2.html
- *Evaluations of Elementary and Secondary Education Programs* at http://www.ed.gov/offices/OUS/eval/elem.html

Some problems were noticed with links. Pages that don't link back to OUS but should include:

- Asia Pacific Economic Corporation (http://www.ed.gov/offices/OUS/APEC/)
- FY 1999 Budget (http://www.ed.gov/offices/OUS/Budget99/)

Documents available in PDF format for which there are no links to the Acrobat reader include:

- The *FY 1999 Budget* (http://www.ed.gov/offices/OUS/Budget99/BudgetSum/index.html)
- *Financial Aid Evaluation* (http://www.ed.gov/offices/OUS/eval/finaid.html)
- *Continuous Improvement Management* (http://www.ed.gov/offices/OUS/eval/21cent/21stc.html)

Documents available in zipped format for which there is no link to the zip utility software directory include *Emergence of Tech Prep at State & Local Levels (1995)* (ftp://ftp.ed.gov/www/ZipDocs/Emerge.zip) which is linked from (http://www.ed.gov/pubs/Emergence/). This zip document also uses FTP protocol rather than HTTP protocol. Navigational icons appeared to be limited to movement within a single web page, such as to the top of the page; all other navigational aids appeared to be presented as text-based links. The use of color on the *Budget Calendar* at http://www.ed.gov/offices/OUS/budcal99.html (black on yellow) made the text a little bit hard to see, but it wasn't too bad. There is a lot of older information available from the OUS site, but all older information is clearly marked as to the publication date. There was one instance found where a current page links back to a non-current page:

- The 1998 Title I Grants page (http://www.ed.gov/offices/OUS/title1.htm) is linked up to the 1997 Title I page (http://www.ed.gov/offices/OUS/us97.htm) rather than the current 1998 Title I page (http://www.ed.gov/offices/OUS/us98.htm*)*.

No copyrighted material was found, but there was a notice with the *Evaluation Primer* (http://www.ed.gov/offices/OUS/eval/primer1.html) stating that this was in the public domain.

Office of Management (OM)
http://www.ed.gov/offices/OM/

The components of this office have done the best job of providing disclaimers among the sites reviewed. Disclaimers are available on the following pages:

- The Office of Hearings and Appeals (http://www.ed-oha.org/) has provided a link to their disclaimer statement (http://www.ed-oha.org/disclaim.html) right on the home page

- The Family Policy Compliance Office (http://www.ed.gov/offices/OM/fpco.html) has included a Disclaimer section at the bottom of their home page

This office has also done the best job of including mission statements among sites reviewed. Mission statements can be found on the following home pages:

- Family Policy Compliance Office (http://www.ed.gov/offices/OM/fpco.html)
- Human Resources Group (http://www.ed.gov/offices/OM/hrg.html)
- Labor Relations Group (http://www.ed.gov/offices/OM/wlabor.html)
- Quality Workplace Group (http://www.ed.gov/offices/OM/wquality.html)
- Training and Development Group (http://www.ed.gov/offices/OM/wtraindg.html)

In general the links are good, but a few problems were noted. Documents missing links back to the ED home page and the OM home page include:

- *OM: Complaint and Motion* (http://www.ed.gov/offices/OM/complain.html, http://www.ed.gov/offices/OM/motion.html) does not have links back to either OM or ED
- Letter from Leroy Booker (http://www.ed.gov/offices/OM/hope.html)

The *Collective Bargaining Agreement* (http://www.ed.gov/offices/OM/toc.html) is not available as a PDF, Microsoft Word or ASCII file for offline display or print; but common sense indicates that it should be. Pages offering PDF files for download that include a link to the Adobe Acrobat reader include:

- *Family Policy Compliance Office* (http://www.ed.gov/offices/OM/fpco.html)
- *Weekly Job Vacancies* (http://www.ed.gov/offices/OM/jobweb.html)

Some pages include disclaimers:

- *Family Policy Compliance Office* at http://www.ed.gov/offices/OM/fpco.html
- *Office of Hearings and Appeals* at http://www.ed-oha.org/)

while others do not

- *Management Systems Improvement* at http://www.ed.gov/offices/OM/msig.html)

but in each case external links are not explicitly marked as such. The *Weekly Job Vacancies* (http://www.ed.gov/offices/OM/jobweb.html) appears to be very current.

Office of Civil Rights (OCR)
http://www.ed.gov/offices/OCR/

OCR includes two major links back to the main ED site, for Search and Year 2000 information. The Related Links page (http://www.ed.gov/offices/OCR/links.html) includes a disclaimer, but does not otherwise mark each external link explicitly. However, there are numerous link problems on this site, more than were found on any other site reviewed:

- Pages that link back to the ED home page, but not to the OCR home page include biographical pages for --
  - *Norma V. Cantu* at http://www.ed.gov/offices/OCR/cantu.html
  - *Raymond Pierce* at http://www.ed.gov/offices/OCR/pierce.html
  - *Arthur Coleman* at http://www.ed.gov/offices/OCR/coleman.html
- Documents that are not linked back to OCR or ED but should be include

- All 10 of the documents found under the headings "TITLE VI OF THE CIVIL RIGHTS ACT 1964 / AFFIRMATIVE ACTION" and "OCR REPORTS, STUDIES AND STATISTICS" on the *Publications and Products* page at http://www.ed.gov/offices/OCR/ocrprod.html:

  - *U.S. Department of Education/Office for Civil Rights: Letter of Findings to University of California, Berkeley School of Law (09/25/92) and settlement agreement. Subject: Considerations for determining permissibility of affirmative action admissions program under Title VI of the Civil Rights Act of 1964. File Update: 09/22/97*at http://www.ed.gov/offices/OCR/ucberkle.html
  - *U.S. Department of Education/Office for Civil Rights: Title VI of the Civil Rights Act of 1964; Final policy on race-targeted aid (02/23/94). Non-discrimination in Federally assisted programs. Replaces the proposed policy guidance dated December 10, 1992 and published in the Federal Register.* at http://www.ed.gov/offices/OCR/racetarg.html
  - *U.S. Department of Education/Office for Civil Rights: Letter to College and University Counsel confirming policy guidance on race-targeted financial aid in light of Podberesky and Adarand decisions. (09/07/95). Title VI of the Civil Rights Act of 1964* at http://www.ed.gov/offices/OCR/podberes.html
  - *U.S. Department of Education/Office for Civil Rights: Memorandum to UCLA. Subject: Title VI of the Civil Rights Act of 1964: Investigation of the UCLA undergraduate admissions program regarding discrimination against Asian American applicants to the College of Letters and Science (L & S) and the School of Engineering and Applied Science (SEAS).* at http://www.ed.gov/offices/OCR/ucla.html
  - *U.S. Department of Education/Office for Civil Rights: Memorandum to College and University Counsel (6/30/96). Subject: Title VI of the Civil Rights Act of 1964: Consideration of race in making college and university admissions decisions and granting financial aid. File Update: 07/22/97* at http://www.ed.gov/offices/OCR/dearcol.html
  - *U.S. Department of Education/Office for Civil Rights: Resolution Letter to the Washington Legal Foundation (02/21/97), and Florida Atlantic University Resolution Agreement . Subject: Race-based scholarship and compliance with the Title VI of the Civil Rights Act of 1964. File Update: 09/22/97* at http://www.ed.gov/offices/OCR/fau.html
  - *U.S. Department of Education/Office of the Secretary: Dear Colleague Letter from the Secretary of Education Riley (03/19/97). Subject: California Civil Rights Initiative, Proposition 209, regarding the responsibilities of California's school districts and colleges under educational programs and civil rights laws administered by this Department. Title VI of the Civil Rights Act of 1964. Affirmative*

        Action. File Update: 09/23/97 at http://www.ed.gov/offices/OCR/prop209.html

        - *U.S. Department of Education/Office for Civil Rights: Memorandum to Honorable Rodney Ellis, Texas Senate (4/11/97). Subject: Title VI of the Civil Rights Act of 1964: Hopwood v. Texas* at http://www.ed.gov/offices/OCR/hopwood.html
        - *U.S. Department of Education/Office for Civil Rights: Memorandum to the Oregon State System of Higher Education (07/03/97), and Resolution Agreement. Subject: Tuition Waver Program compliance with the Title VI of the Civil Rights Act of 1964. File Update: 09/22/97* at http://www.ed.gov/offices/OCR/oregon.html
        - *1998 UNITED STATES DEPARTMENT OF EDUCATION U.S. ACCREDITED POSTSECONDARY MINORITY INSTITUTIONS (1)* at http://www.ed.gov/offices/OCR/minlist1998.html

    - Both of the documents found under the subheading "Funding of Athletic Scholarships" under the heading "TITLE IX OF THE EDUCATION AMENDMENTS OF 1972" on the same *Publications and Products* page at http://www.ed.gov/offices/OCR/ocrprod.html

        - Two letters to Bowling Green University dated July 23, 1998 at http://www.ed.gov/offices/OCR/bowlgrn.html

- The *Annual Report to Congress* for 1997 (http://www.ed.gov/offices/OCR/AnnRpt97/index.html) includes links to OCR National Headquarters and OCR Offices, but these links do not work because they are relative links looking for the wrong level in the OCR hierarchy of pages.

- The document *U.S. Department of Education/Office for Civil Rights: Summary Sexual Harassment Guidance: Harassment of Students by School Employees, Other Students, or Third Parties* is broken into two major sections (http://www.ed.gov/offices/OCR/sexhar00.html, http://www.ed.gov/offices/OCR/sexhar01.html) which are linked to each other, but nothing else. This document should have a table of contents page with a link back to the OCR home page.

Appendix III-5, Side By Side Analysis Of Web Policy Documents

Appendix III-5, Side By Side Analysis Of Web Policy Documents

The side-by-side analysis is arranged based on the organization found in the Federal Web Consortium Guidelines. This comparison is not a complete review of the differences between the Department of Education web policy and the Federal Web Consortium Guidelines – it is a limited review of selected topics where the policies appear to differ markedly.

APPENDIX III-5

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Responsibility for creating web policy	From I. Executive Summary: "Agencies need to involve *not only* their information systems and services experts (Webmasters and Webauthors), *but also public affairs officers, records managers, FOIA or Privacy Act Officers, and the General Counsel when establishing Internet and WWW policy* (emphasis added)."	From III. Administrative Roles and Responsibilities: "The *ED Webmaster sets policy and standards* for the Department's web presence and coordinates with each POC to ensure that documents posted to the ed.gov domain are approved for content and meet ED-WWW standards (emphasis added)."
Checklist	I. B. Checklist "The Consortium developed "The Home Page Checklist" for guiding the development, maintenance and enhancements of agency WWW sites. Home Page Checklist CONTENT ___The content of a page should be related to the organization's function and mission. ___The specific purpose for each top-level home page should be stated. ___WWW content should be reviewed before release. ___Each home page should identify and display a responsible party and provide contact information. ___Information within a document should be accurate. ___A home page should be syntactically correct. ___Spelling and grammar should be correct within a document. ___Information within a document should remain current. ___Document content or data should comply with embargoes. ___Documents should comply with organizational templates. ___External links should be germane to the purpose of the	The primary WPD contains no such checklist. There is a review checklist available (from http://www.ed.gov/offices/OCIO/internet/inet8.html) : Review Checklist Title of Site and URL: Owner/Reviewer: Date: "This checklist was developed by ED's Internet Working Group to provide a basic framework for reviewing and improving ED Web Servers and ED Sponsored Servers. ED sites should be reviewed frequently; even sites with relatively static content should be reviewed semi-annually. The checklist is intended to foster an ease-of-use, familiarity, and consistency of ED Web Sites for public users without unnecessarily constraining web design and organization. Procedures for WWW development are outlined in ED's World Wide Web Policy and Procedures Guide. (References to the ED World Wide Web Policy and Procedures Guide and to updates to that guide are provided in parentheses after checklist items.)" Web Site Customer Support "There is an E-mail link ("mailto") on the main pages of a document

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Checklist (continued)	document. ___External links should display the title and the URL. NAVIGATION/ORGANIZATION ___Each page within a collection should have a link to the collection's home page. ___Each home page should link back to the sponsoring home page. ___Links should be checked periodically to avoid "dead links." ___When the home page is moved to a new location, leave a note at the old location. ___Use graphical clues, such as color, icons, wallpaper, consistency of fonts, etc. to give Web visitors a sense of location or local environment. ___Provide search capabilities for large or complex WWW sites. STYLE/MARKUP ___Every home page should have a title. ___The title and top level heading for a home page should be the same. ___Include appropriate header comments, such as HTML version. ___Every title/heading should reference the theme of the home page. ___Paragraphs should be clear and concise. ___Horizontal rules can be used to separate dissimilar paragraphs. ___Text highlighting (italics, bold, underline) should be used sparingly. ___Appropriate links should be provided to glossaries, indexes, footnotes, external documents and table of contents. ___Footers should be separated from the body by a horizontal rule. ___Footers should provide logical navigational aids.	collection, and any other information on how visitors may contact the responsible individual or offices with questions. Mail is being checked, referred or responded to promptly. (Links to E- mail addresses - p. 19)" Timeliness of Web Site Content "Information on main web pages is reviewed regularly to ensure that it is up-to-date. Obsolete content is systematically archived or removed, to ensure that visitors are not confused by information or deadlines that are no longer relevant. (Timeliness/Currency of ED-controlled content - p. 5)" Linking Back to the ED Web Site "Indications of Department sponsorship are apparent on main web pages. This includes providing navigation links back to the ED or sponsoring Principal Office home page, which is needed to enable ED customers to navigate easily among various ED web sites/servers. (Principal Office Home Pages, Program and Project Home Pages - pp. 5-6; Links to Home Page - p.19)" Inclusion in ED Cross-Site Index "All ED-controlled and ED-sponsored web sites are incorporated in the Department's Cross-Site Index Directory. Web files are integrated with all other ED-Web resources through a "one-stop" service so that our customers can quickly find desired information. (Navigation/Organization - p.8; Cross-links within ED Site - pp. 20-23)"

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Checklist (continued)	___The home page footer should display the URL for the home page. ___The home page footer should include the 'mail to' for the responsible party. ___The home page footer should include the last date the document was updated. ___Navigational icons should be standardized across the agency. ___Agency logos should be used where appropriate. ___Large documents should be divided logically. ___MIME types should be restricted to GIF, TIFF, JPEG, MPEG, AU, and SND. ___Thumbnail images should be used to link to large images. ___Images should not be wider than 472 pixels. ___Avoid long, thin images such as specialty horizontal rules. ___The width and height of each image should be specified in the HTML tag. ___Every graphic should have an associated and meaningful (ALT) text. ___Image maps should have alternate text-based selection mechanisms. ___Audio clips should have text transcripts or descriptions. ___Every page should be tested with multiple viewers (e.g. Lynx, Mosaic, Netscape, Microsoft Internet Explorer). ___Write to the current HTML standard. ___Proprietary markup should be avoided. ___Tables should provide alternate preformatted text markup. ___Consider on-the-fly generation of standard page elements, such as footers, images, etc. through the use of CGI scripts to ensure easier maintenance and consistency of pages."	User Accessibility "Web pages are coded to ensure equitable access to information for users with disabilities and low-end browsers. This includes designing pages so that there is a text- equivalent for information contained in graphics, providing text-only options for frames and tables, and validating accessibility (Bobby). This also includes attention to the overall download time for pages--keeping in mind that too many graphic and animation files can substantially slow viewing and downloading, especially for visitors accessing the Internet through a modem. (Accessibility - p. 9; Considerations for Users with Disabilities, Character-only, or Low-Bandwidth Access - p. 28)" HTML Formatting Quality "In general, web pages comply with generally recognized (valid, open-standard) HTML coding and syntax. The use of basic markup techniques present a coherent appearance across diverse servers/sites. Vendor-specific extensions are not used in such a way as to degrade service to customers who use other vendors' products. (Section VIII. Technical Standards and Guidelines - pp. 15-33; Client Feature Variations, Client-Specific Markup - pp. 26-27)" Use of Vendor-Specific Products "Care is taken in utilizing vendor-specific and version-specific applications on web servers. If these are necessary, the Webmaster has provided options for users to obtain and install required software applications, and instructions are in a prominent location of entry pages. (File Formats - pp. 15-16)"

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Checklist (continued)		Links to External Web Sites "All pointers to external sites are functional, consistent with the communications goals of the Department, and provide visible links to appropriate ED disclaimers. The choice of links to external Web sites should not give a competitive advantage to some organizations or businesses over others, though there may be situations where it would be appropriate to link a Web site to one entity for a particular purpose. (External Content: Approval, Context - p. 7; Establishing Links to External Organizations)" Content Clearances "Information communicated on web sites (including copyrighted material and images) has been approved by responsible Principal Office officials, and has gone through the applicable Public Affairs and Office of General Counsel clearances if necessary. (Approvals for ED-Controlled Content - p. 4; Approvals for ED-Sponsored Content - p. 7; Copyright and Fair Use - p. 10)" Other Comments and Suggestions
Responsible Party Contact	Responsible Party/Contact "Every home page or grouping of related pages should list an e-mail address, or include a link to an e-mail form which can be used to contact a responsible party regarding the content of the page(s). The e-mail address should not necessarily be that of an agency employee and may be that of the Webmaster for the WWW server on which the document resides."	Responsible Party/Contact "Every document (or document collection) must have an E-mail address or link to an E-mail form, which can be used to contact a responsible party regarding the content of the page(s). The E-mail address will not necessarily be that of an ED employee and may be that of the Webmaster for the WWW server on which the document resides if no content expert can be identified. ***Organizations, programs, or projects must establish generic E-mail addresses***

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Responsible Party Contact (continued)	"*Where personal service is not important*, it is acceptable to establish generic e-mail addresses for agency public points of contact instead of using personal addresses (e.g., library@agency.gov rather than john_doe@agency.gov). *However, many people prefer responding to real people rather than impersonal mail locations* (emphasis added)."	authorized by the Department for their public points of contact, *instead of using personal or corporate addresses* (e.g., library@ed.gov rather than john_doe@ed.gov) (emphasis added)."
Personal/ Employee Home Pages	Individual Employee Home Pages "*Individual employee home pages can be very useful* for those who deal directly with a specific user community, the public, or hold high profile positions. *Employee home pages should not be viewed as 'personal' home pages.* Content and external linkages should relate to the employee's role as they support the agency's mission. The following is one possible approach to establishing agency policy: *Individual employee home pages are permitted if they relate to and support the functions the individual performs at this agency.* All information and external links on an individual home page should support this purpose. A link to the standard disclaimer must be included near the top of the page. Individuals are responsible for making sure the content of their home pages and related documents are appropriate and approved by organizational management. An individual home page should not be considered as an "electronic office" or an "electronic desktop." Information that might be harmlessly posted on an office wall or bulletin board is not necessarily appropriate to the purpose of an individual employee home page (emphasis added)."	Personal Home Pages "*Personal home pages are not supported* on the main ED WWW server or OCIO's shared servers (emphasis added)." [Note that, despite this statement, short biographical pages for key personnel are available.]

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
External Links	From II. B. External Linked Content "All external links should be clearly identified as such *by including the page title (or appropriate description) as well as the URL. Displaying the URL provides the added benefit of allowing users who are working from a printout the ability to locate the referenced source* (emphasis added)."	From IV.C. External Content "Users cannot always easily tell when they are leaving ED "webspace" via an external link. All external links must be clearly identified as such."
Restricted Access	Restricted Access "Sensitive, confidential, or privacy information should not be placed in publicly available directories. In some instances, there may be a need to place documents that are not officially public (i.e., discussion drafts, prototypes, content which is in development, etc.) in a non-private directory for access by a geographically distributed workgroup, test group, or team. The sponsoring organization is responsible for determining whether to have the Webmaster password-protect the materials to prevent access by unauthorized individuals." "Documents and collections that are not public (i.e., not yet published, not fully marked up or tested, internal working group notes, etc.) should not be linked to publicly accessible documents or placed in publicly available directories without information on the restrictions and an explicit notice such as: "Coming soon expanded information about..." or "Internal working documents..." Pre-release information that is available on the open Internet should be restricted by domain, IP address, or password." *"Postings to agency WWW sites are official agency disclosures and must be consistent with other agency disclosures of the same or*	Restricted Access "Sensitive, confidential, or private information should not be placed in publicly available directories. In some instances, there may be a need to place documents that are not officially public in a non-private directory for access by a geographically distributed workgroup, test group, or team. The POC is responsible for determining whether to password-protect the materials to prevent access by unauthorized individuals."

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Restricted Access (continued)	*similar information* (emphasis added). For example, if requests for draft agency documents are routinely denied from Freedom of Information Act requesters as pre-decisional to protect the integrity of the agency's deliberative process, then it would be more appropriate to post draft documents on the agency intranet server rather than on the public WWW site." "*It may be necessary to coordinate with the Webmaster to explicitly exclude restricted access documents from site-wide full-text indexes* (emphasis added)."	
Headers	Headers "Every home page should have a top-level <H1> header near the top of the first screen which clearly identifies the theme of the home page. An <H2> header should be used for continuation pages. Like the title, the header should be as short as possible but fully informative and specific. *By convention, the top-level header and the title for each page should be the same.* Lower-level headers (e.g., <H3>, etc.) may be used if appropriate to the document. Header markup should not be used to emphasize entire paragraphs. Remember, headers should be used to structure the page, not format the contents visually (emphasis added)." "Documents which are divided into multiple pages should reference the home page's theme in the header of each continuation page. This will help identify the document to users who may arrive at the page without knowing its context, (e.g., as the result of a full-text search) and will make the bookmark meaningful. For example, this document is part of the collection belonging to the World Wide Web (WWW) Home Page Guidelines. It should be referenced in an	Headers "Every page will have a top-level <H1> header or equivalent graphic banner with ALT text near the top of the first screen, except that an <H2> header may be used for continuation pages when a chapter or section is subdivided. The header should not exceed 1-2 lines of text." "Documents which are divided into multiple pages will include the document title and publication date in italics above the top-level header, to help identify the document to users who may arrive at the page without knowing its context, (e.g., the result of a full-text search)." "Lower-level headers (e.g., <H2>, <H3>, etc.) may be used if appropriate to the document. Header markup will not be used to emphasize entire paragraphs. Generally, section titles and other text marked with the Subhead style in a word-processing document should be marked up as lower-level HTML headers instead of simply appearing in bold."

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Headers (continued)	<H2> heading (and in the title) as IV. Style/Markup."	"A graphic with ALT text may act as a header. Other HTML headers used on the same page should take into account the relative size of the graphic and be sized accordingly. For example, a graphic banner might replace the top level <H1> on a page; therefore, any HTML headers used below it would be <H2> and smaller." "Additional text formatting tags (bold, italic, etc.) should not be applied to headers because they can confuse some browsers (like Lynx). Most browsers default to bold to display headers anyway. Centering the headers is OK."
Body	Body "Paragraphs within the body of a document should be clear and concise. Where the audience has a limited knowledge of the subject being addressed, it is often desirable to hyperlink explanatory information. Hyperlinks to a glossary, footnotes, and external documents provide additional information to less informed readers. Other effective uses of hyperlinks include graphics, tables, surveys, and indexes." "Care should be taken in separating and emphasizing content within a page. Horizontal rules <HR> can often be used effectively to separate themes within a page. However, the overuse of italics and bold can make text difficult to read." "Consider using functional markup, such as <strong>, rather than appearance markup, like <bold>, to give the user more control over the way the final document is viewed." "Talking about mechanics rather than substance is considered to be in poor taste. For example, the sentence "You can read more	The ED primary WPD does not include a section like this.

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Body (continued)	about this product in the tutorial which is linked here to this home page" is better stated "The Tutorial will help you learn about this product."."	
Standard Footers	Standard Footer "At a minimum, most web pages have footers which are separated from the body (usually by a horizontal rule<HR>) and contain the following information: The URL (for the home page footer). The date the document was last updated. An *e-mail address* of a responsible party for the web page (emphasis added)." "In addition, the footer most often contains navigational aids such as a mapped bar or buttons which allow the user to move logically through the document. For documents, arranged like a book, the end of page links are to the table of contents, to the next chapter, to the previous chapter, and to the entry home page. These links are frequently tied to icons (see Standard Icons below) or mapped graphics."	Standard Footer "Every document will contain the following information in a standard footer, separated from the body of the page by a horizontal rule: last update date, e-mail address *or initials* of responsible party with mailto: link, and link to an appropriate home page (for the document, collection, project, program, organization, or Department) (emphasis added)." <A HREF="/index.html"><IMG SRC="/icons/EDhome.gif" alt="[Go to ED Home Page]"></A> <P><EM>This page last modified January 1, 1998 (<A HREF="mailto:webmaster@inet.ed.gov">jd</A>).</EM>
Large or complex documents	From Large or Complex Documents "Large documents (*greater than five pages*) should be organized into sections or chapters and linked together (emphasis added). If the material is meant to be read consecutively, then a table of contents and division by chapter may be most appropriate. If the material is meant to be accessed randomly, then a division by section with key word links to appropriate sections may be best." *"Note that some users will wish to print the entire document for*	From File Size "Large or complex documents intended for online viewing, *typically those larger than 10 screens*, should be divided into multiple, smaller files (emphasis added). If possible, files should be divided along logical break points such as chapters or sections. To assist users in navigating sectioned documents, each page should include standard navigation buttons at the bottom with links to the table of contents and previous and next section (see example below). The first and last sections of the document should omit the previous and

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Standard Footer (continued)	*later reading, so it is still prudent to provide a link to download the entire document* (emphasis added)."	next link respectively." <A HREF="prevfile.html">[Title of Previous Section] <IMG SRC="/icons/prev.gif" ALIGN=BOTTOM ALT="" WIDTH=31 HEIGHT=32></A> <A HREF="index.html"> <IMG SRC="/icons/up.gif" ALIGN=BOTTOM ALT="[Table of Contents]" WIDTH=31 HEIGHT=32></A> <A HREF="nextfile.html"> <IMG SRC="/icons/next.gif" ALIGN=BOTTOM ALT="" WIDTH=31 HEIGHT=32>[Title of Next Section]</A> "*When a document consists of more than ten files*, either a PDF or a compressed file in ZIP format should be made available to allow users to easily download the whole document (emphasis added)."
Cookies	From V. Additional Points: Cookies "Cookies are used by the server to track user information across several WWW pages or WWW sessions. WWW site users should be notified of the use of Cookies and the purpose for their use. (See Cookies monitoring in section [VI].) An example where cookies might be used to track usage is an end user training service. Cookies can be used to track student progress and automatically connect them to the next lesson." From VI. Emerging Standards: Cookies Monitoring "This notice has been designed to warn WWW site users that the cookies feature is being employed. One possible approach to a	Does not have any headers called "Cookies", but does offer the following statement (from Security/Privacy): "The use of cookies or other means to collect user information may also raise privacy concerns among users. Therefore, the ED Webmaster, Departmental Security and Privacy Act officials, and the POC Home Page Editor must be consulted with in advance to review and approve these sites. The purpose of this review is to ensure that information contained and transmitted via the ED-WWW Server will be secure, that all relevant Federal statutes are adhered to, and appropriate warnings, disclosures and/or disclaimers are openly displayed (see References for requirements and sample disclaimers)." [Please note that requirements and sample disclaimers for cookies are never explicitly stated anywhere within the Department's web

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Cookies (continued)	[cookies] notice: Cookies Notice: This site uses a technique known [as] cookies to provide better services to our users. Cookies allow us to keep a record of [your] activities while visiting our WWW site. If you object to this monitoring, you may wish to exit the WWW site at this time." From What are the Privacy Act Issues: Issue Two: Using cookies and accumulating a WWW site visitor's session information. "Anecdotal evidence suggests that the use of cookies and the collection of session information poses even greater privacy concerns to WWW site visitors than does the accumulation of electronic mail addresses. This concern is fitting as over time the accumulation of this data can reveal a visitor's personal preferences and particular interests. *Agencies should always notify the public when they collect this type of data* (emphasis added). Depending on the circumstances, notification may [be] explicitly required by the Privacy Act or provide a beneficial service to the customer. For example, if the session information is associated to an Internet Protocol (IP) address (which is generally held as not a personal identifier) then notification isn't statutorily necessary. But, again, *as service to the customer, notice should be given anyway* (emphasis added). Consult with your Privacy Act Officer."	policy.]

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
User Information Collection	From V. Additional Points: User Information Collection "Organizations should be careful in collecting information from users. WWW site users should be notified of any user information collection activities and the purpose for its use. There are numerous laws and regulations that govern this activity. Two examples: • Conducting electronic surveys is subject to the provisions of the Paperwork Reduction Act. • E-mail addresses in many cases are personal identifiers and their collection and potential retrieval may be subject to the Privacy Act." From "What are the Privacy Act Issues?": Issue One: Electronic Mail Addresses "Because most electronic mail addresses are personally identifying or are at least associated with a specific individual, their compilation into a database or mailing list presents valid privacy concerns. To allay public fears of inappropriate use and loss of control, agencies should generally treat electronic mail addresses as personal identifiers and personal records under the Privacy Act." "The accumulation of electronic mail addresses presents at least two separate issues: 1) the intentional accumulation and compilation into a database, and 2) the incidental collection as a by-product of a software application or otherwise during the normal course of business." "The intentional collection of electronic mail addresses and	The only mention of user information collected by the Department falls under the header "Usage Monitoring": "Information that identifies individuals (e.g., e-mail address, IP address) is not available to the public, and is deleted after 90 days."

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
User Information Collection (continued)	compilation into a database presumes the intention on the part of the agency to maintain the database (mailing list) in some up-to-date condition and then retrieve and use it in the future. Such a list is a system of records covered by the Privacy Act and is subject to the Act's protections and requirements that your Privacy Act officer will tell you about, e.g., you need to notify the public that you are compiling them and why. But, please note that this discussion pertains to an agency list not your own Rolodex." "The incidental collection of e-mail addresses does not have the same Privacy Act implications as does the intentional collection and therefore you don't need to notify the public. For example, the automatic accumulation of electronic mail addresses by discussion group software does not have Privacy Act implications so long as the accumulation is maintained automatically by the software and not used by agency employees. Another example of incidental collection is the agency keeping the entire text and header of electronic mail messages where the sender's electronic mail address is located in the header. This type of accumulation is analogous to an agency's maintenance of routine paper correspondence and should be handled in a similar fashion."	
Copyright	From V. Additional Points: Copyright and Multimedia Documents "A copyright is the 'rights' of an author or publisher to the 'copy' (text of an article) which that author or publisher produced. This has come to mean the right of intellectual property, whereby authors obtain, for a specific time, certain exclusive rights to their work." "In the United States, copyright protections are exclusively	Copyright and Fair Use "A copyright is the "right" of an author or publisher to control the use of an original work that the author or publisher has produced. This "right" however, does not extend to works of the federal government, and therefore works created by U.S. Department of Education employees as part of their official duties are in the public domain. In addition to official records and documents of the government, other examples of work in the public domain include:

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Copyright (continued)	granted under federal law, which derive from Article 1, Section 8, Clause 8 of the U.S. Constitution which provides Congress with the power "to promote science and the useful arts, by securing for a limited times to authors ...the exclusive right to their...writings"." "In the United States, and most other countries, a work is copyrighted automatically upon creation. No notice is required nor is registration required with a government agency." "Works which do not enjoy copyright privileges are considered to be in the public domain. Common examples of public domain works are: • Works for which the copyright has expired. Expiration of a copyright depends on a number of criteria and can run from 28 to 100 years. • Works of the U.S. Government. These works cannot be copyrighted. However, it appears that works which have been created for the Government by a commercial entity may have some copyright protection from commercial use. • Non-copyrightable works such as titles, names, short phrases and slogans. (However, these may be trademarks.) • Works for which the copyright has been forfeited or abandoned. The most common form of copyright forfeiture is the lack of specific copyright notice on materials published before March 1, 1988. (After that date posting of notice was no longer required to effect a copyright.) Abandonment requires specific language and intent to place copyrighted works in the public domain by the author." "Fair Use" of a Copyrighted Work. "Copyrighted works can be "fairly used" without fear of copyright	works whose copyright has expired, been forfeited or abandoned and non-copyrightable works such as titles, names, short phrases or slogans. (Titles and phrases may be protected under trademark laws.) While not subject to the copyright laws, excerpts of government information should be accurately presented and cited." "Copyrighted material (e.g. newspaper articles, magazine articles, books, etc.) may be published on the Department's Web site only if the item's publisher first gives the Department permission to publish the item. A notice that the Department received reprint permission must accompany the item when it is published and must include the full name, address and telephone number of the publisher. (Sample notice: "Printed with permission from (name of paper), (full address), (telephone number).".") "An author's copyright is not absolute however and the "fair use"doctrine allows copyrighted works to be used for purposes such as criticism, comment, news reporting, teaching, scholarship and research. Refer any questions about whether reprint permission is needed before posting a particular item on the Department's Web site to the Office of the General Counsel (401-6700)."

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Copyright (continued)	infringement for such purposes as criticism, comment, news reporting, teaching, scholarship, or research. Whether the use of a work is fair is determined by balancing these factors: • The purpose and character of the use. • The nature of the copyrighted work. • The amount and substantiality of the portion used in relation to the work as a whole. • The effect of the use on the potential market for, or value of, the copyrighted work." Incorporating Works into Multimedia (Internet) Documents. "For multimedia works the following should be considered: • Extreme caution should be exercised in using digital material downloaded from the Internet because there is a mix of works protected by copyright and works in the public domain on the Internet. Access to these works on the Internet does not automatically mean that these works can be reproduced and reused without permission and/or royalty payment. • Please note that proper credit should be given for all copyrighted material. When in doubt, credit should be given as if the material was copyrighted. • In general no more than 10% of copyrighted textual, motion, music, or collections of illustrations or photographs should be included. In the case of independent illustrations or collections, no more than 5 images of an artist or photographer should be included. • If there is a possibility that multimedia content (e.g. image, movie) may become part of a commercial product in the future or will become widely disseminated, then permissions should be sought before publication of the product. • If any alterations are made to copyrighted material, then care should be taken to explain the specific changes."	

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Disclaimers	From V. Additional Points: Disclaimers "Agency servers and most agency multimedia documents should carry a Disclaimer of Endorsement and a Disclaimer of Liability. These disclaimers address references to commercial products and services, as well as merchantability and fitness for purpose. Sample disclaimers can be found on the disclaimer template page in section [VI]." From VI. Emerging Standards: Disclaimers "These disclaimers are styled after many government disclaimers on the Internet... they are not intended to be used as they are... but rather a starting point for thinking about your own disclaimers." "Copyright Status: The U.S. Government retains a nonexclusive, royalty-free license to publish or reproduce these documents, or allow others to do so, for U.S. Government purposes. These documents may be freely distributed and used for non-commercial, scientific and educational purposes. Commercial use of the documents available from this server may be protected under the U.S. and Foreign Copyright Laws. Individual documents on this server may have different copyright conditions, and that will be noted in those documents." "Disclaimer of Endorsement: Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply	**Does not have any sections called "Disclaimer", and the text of the available disclaimers are elsewhere. There is a Disclaimer of Endorsement, but there is current no Disclaimer of Liability.**

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Disclaimers (continued)	its endorsement, recommendation, or favoring by the United States Government. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government, and shall not be used for advertising or product endorsement purposes." "Disclaimer of Liability: With respect to documents available from this server, neither the United States Government nor any of its employees, makes any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose; nor assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed; nor represents that its use would not infringe privately owned rights." "Notice: Information from this server resides on a computer system funded by a U. S. Government agency. The use of this system may be monitored for computer security purposes. Any unauthorized access to this system is prohibited and is subject to criminal and civil penalties under Federal Laws including but not limited to Public Laws 83-703 and 99-474."	
Electronic Public Disclosure	From V. Additional Points: Electronic Public Disclosure "Postings to agency WWW sites are official agency disclosures and must be consistent with other agency disclosures of the same or similar information. For example, if requests for draft agency documents are routinely denied from FOIA requesters as pre-decisional to protect the integrity of the agency's deliberative process, then it would be more appropriate to post draft documents on the agency intranet rather than on the public WWW site. To	No comparable section was found in the Department's policy documents.

APPENDIX III-5 (continued)

Side-by-side Analysis of Web Policy Documents

Topic	Federal Web Consortium	Department of Education
Electronic Public Disclosure (continued)	facilitate release of information, *agencies may want to develop a WWW statement of responsibility* that reminds Webauthors of release criteria and then rely on the professionalism of content developers (emphasis added). An example of this statement of responsibility can be found at [http://www.cise.nsf.gov/pub/responsibility.html]."	
GILS	From V. Additional Points: The Government Information Locator Service (GILS) "GILS is an information processing standard and comprehensive indexing scheme that will identify, describe and help find electronic and non-electronic Federal government information resources. Not only will it point the user to the source of the information; as it evolves, GILS will also provide linkages to assist in its delivery. GILS supplements other agency information dissemination mechanisms and commercial information sources. GILS uses network technology and international standards for information search and retrieval so that information can be retrieved in a variety of ways, and so that GILS users can find other information resources worldwide. *Agencies should ensure that a GILS record is created for each agency WWW site* (emphasis added). Agencies also should assure that all GILS records which identify WWW-retrievable information dissemination products include linkage to that product. See the DefenseLINK GILS for the DoD implementation of at http://www.dtic.mil/defenselink/locator/morein.html."	Government Information Locator Service (GILS) Compliance "GILS is an information processing standard and comprehensive indexing scheme that is being created that will identify, describe and help find electronic and non-electronic Federal government information resources. Information sources and products on ED WWW servers will, when appropriate, have GILS records created for them. Contact OCIO for further guidance on GILS."

Appendix IV-1, Jeffrey H. Rubin and Ricardo Reimundez, "Log Analysis Tools: Site Server is on the Right Track" *Network Computing*, September 15, 1998, pp. 77 - 85 (*http://www.networkcomputing.com/917/917r1.html)*.

Log-Analysis Tools: Site Server Is on the Right Track

by Jeffrey H. Rubin with Ricardo Reimundez

Assembling a corporate Web site may seem so simple—grab a free copy of a Web server, post just about any content and watch all your marketing dreams come true. The reality isn't quite such a piece of cake, though. Today's Web sites can send hundreds of megabytes of log files to back-end databases, enabling a depth of analysis beyond your wildest imagination.

Using Web cookies and the latest log-analysis programs, you can track, store and report on a remarkable amount of information about individual visitors to your Web site. Tie in your existing corporate database, and you can customize your online offerings based on visitors' preferences, and eventually generate historical reports to find out how many are sufficiently satisfied with your site to make repeat visits. With Web servers' current configurations and high-end log-analysis software, you can learn more about a virtual user than about a shopper physically present in a store.

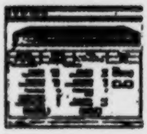
To help you determine which log-analysis software package will best help you realize your site's potential, we tested the leading contenders at Syracuse University's in one of NETWORK COMPUTING's Real-World Labs®. The good news is that we saw vast improvements in the products compared with versions we tested a year ago. All the products can produce sophisticated, customizable reports that will deliver valuable information to Web administrators and senior management alike. Of course, no matter how rich a report you get, remember that software is still just a tool; someone in the organization must be equipped to analyze the reports and apply the information to improve the site.

And even with the incredible advances in log-analysis software made during the past year, most packages still could do a better job of error analysis. net.Genesis Corp.'s net.Analysis is the only product we tested with built-in, on-the-fly reports featuring intelligent error checking. The desire for true user demographics also remains unfulfilled. Although most log-analysis vendors claim to provide detailed user demographics (including country, state and city), they don't make it clear to Web administrators that the information is coming from WhoIs, an Internet service that reports on contact information for DNS and IP Internet domains registered by the InterNIC. WhoIs queries are not a reliable source of demographic data because those who reach your site through a major ISP will appear by default to be located at the service provider's headquarters. For example, according to WhoIs queries, all America Online users appear to

In This Section

Comparative Reviews

8-Port Remote-Access Servers 85
We tested nine models aimed at small offices.



Report Card

Enterprise Log-Analysis Tools

Feature	Weight	Microsoft Site Server 3.0	WebTrends Enterprise Suite 2.1	net.Genesis net.Analysis Pro 3.5	Marketwave Hit List Enterprise 4.0
Marketing-related features	25%	4.5	4	4	3.5
Technical-related features	25%	3	3.5	4.5	4
Performance	25%	5	4	3.5	2
Ease of use	15%	4	5	2	4
Price	10%	5	4.5	3	2
Total score		4.23	4.08	3.60	3.18
A≥4.3, B≥3.5, C≥2.5, D≥1.5, F<1.5 A-C grades include + or − in their ranges		B+	B+	B−	C+

Total scores and weighted scores are based on a scale of 0-5.
Customize the results of this Report Card to your environment using the Interactive Report Card, a Java applet on NETWORK COMPUTING Online, at www.networkcomputing.com.
✓ Products that score a B or above in our tests receive the NETWORK COMPUTING Flying Colors Award.

BEST COPY AVAILABLE

be at the online service provider's headquarters in Vienna, Va. However, none of the packages write these locations into their reports.

Getting Down to Business We separated each product's reporting features into two categories—marketing and technical—to reflect the different needs of the people accessing log-analysis data. While Web administrators focus on page layout, errors, path analysis and browser summaries, marketers eye ad analysis, user demographics and search-engine queries (the ability to pick out keywords in user searches).

We evaluated commercial enterprise-class Web server log-analysis tools from Marketwave Corp., Microsoft Corp., net.Genesis and WebTrends Corp. We judged the four contenders based on performance (how long it took to import and run reports), ease of use, quality of reports, information provided to administrators and marketers, and price.

Microsoft's Site Server 3.0 garnered our Editor's Choice award; it clearly provided the highest level of performance and functionality at the lowest cost. Site Server is capable of full advertising and user analysis at levels well beyond those of its rivals. Site Server can read nearly any log-file format and very efficiently move information to a SQL database.

Our second choice is WebTrends Enterprise Suite 2.1; while it doesn't match Site Server in terms of functionality, it compensates with its ease of use. Enterprise Suite can create comprehensive visit-analysis reports, and also does a powerful job highlighting keywords from users' search queries. Enterprise Suite is a great value for a company that doesn't need the depth of the Site Server package.

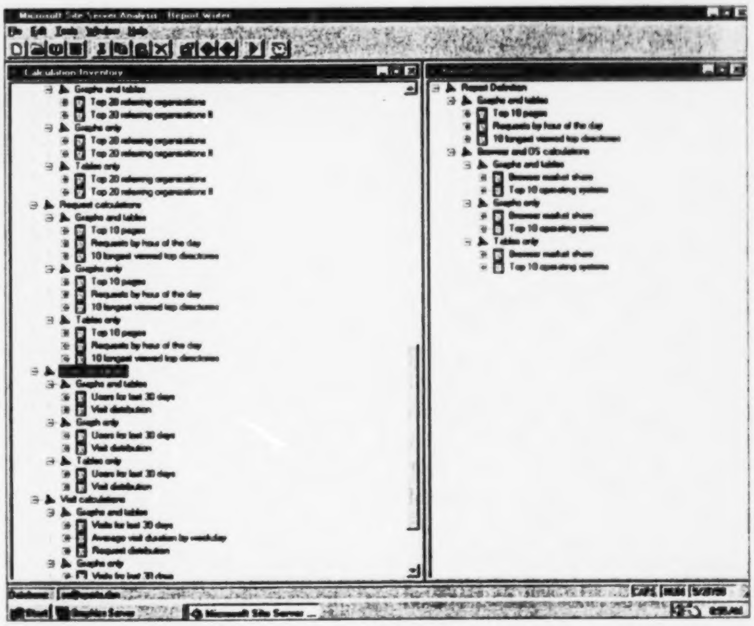
Microsoft Corp.
Site Server 3.0

Starting at $1,239, Microsoft's Site Server 3.0 gives Web administrators the most functionality for the lowest cost. Our testing focused on Usage Analyzer, which is just one component of the Site Server package. Even with it's economical price, Site Server seems to handle all the log-analysis functions any other package offers. Microsoft also includes knowledge management and publishing features as part of the regular package, and transactional analysis in the Commerce Edition. (We did not test these features for this article.)

At first, we were somewhat overwhelmed by Site Server's configuration and management features. Site Server 3.0 uses Microsoft's wizards from installation through configuration. The most difficult thing to adapt to was the inclusion of a separate database wizard to set up the database, import wizard to set up the import and report writer to run a report. Even though it makes sense to break up the functions with individual tools, Microsoft is the only vendor that does so. Site Server runs exclusively on Windows NT, as do two of the other three packages we tested; net.Analysis runs on Unix as well as NT.

The accuracy of Site Server's organizational lookups is one key reason we put the package at the head of the pack. When you request a report to determine who is looking at the Web site, most products query an internal database that contains InterNIC WhoIs information. While this speeds performance, you may find that IP addresses registered after the product was shipped cannot be linked to an organization.

To avoid this, Site Server queries InterNIC directly for WhoIs information. While this slows response the first time the software runs, the information is cached for future use, allowing for quicker imports on subsequent requests. (The cache expires on a regular basis and can be configured by the administrator.) The distinct advantage of querying InterNIC is that the organizational information is updated regularly, making reports more accurate. No other product has a mechanism in place to update the organizational database that ships with the product, aside from regularly scheduled, separately priced updates.



Creating custom reports in Site Server is a simple drag-and-drop operation.

BEST COPY AVAILABLE

Enterprise Log-Analysis Tool Features

	Marketwave Hit List Enterprise 4.0	Microsoft Site Server 3.0	net.Genesis net.Analysis Pro 3.5	WebTrends Enterprise Suite 2.1
Analysis:				
Supports distributed servers (mirrored or split content)	●	●	●	○ (Can read them as wild cards)
Supports multiple log formats	●	●	●	●
Documentation sources	Online	Online	User guide, online	User guide, online
Proxy server log support	●	●	●	●
Reverse DNS lookup	●	●	●	●
Query string analysis (internal)	●	●	●	Keywords only
Query string analysis (external search engines)	●	●	●	Keywords only
Customized filtering	●	●	●	●
Advertising analysis	● (Using redirect script)	●	●	●
Flexibility of custom reports	●	●	●	●
Path analysis	●	●	●	●
DNS caching	●	●	●	Not within SQL
Cookie analysis	●	●	● (Proprietary plug-in)	●
Compressed log support	● (gzip and zip)	● (gzip and zip)	● (gzip and zip)	● (gzip and zip)
Reporting:				
Calculates visits/visitors	●	●	●	●
Import and report progress status indicator	●	●	●	●
Report output formats	HTML, Word, ASCII, comma-deliminated file	HTML, Word, Excel, FTP, e-mail	HTML, Word, Excel, text, comma-deliminated file, FTP, e-mail	HTML, Word, Excel, text, comma-deliminated file, FTP, e-mail
Wizard installation	●	●	●	●
Domain breakdown	●	●	●	●
Geographic breakdown	●	●	●	●
Advanced error checking	○	○	●	○
Advanced referrer checking	○	●	○	●
Browser breakdown	●	●	●	●
Bandwidth summary	●	●	●	●
Comparison to previous logs/trends over time	●	●	●	●
Management:				
Remote administration	●	●	●	● (NT only)
Scheduling for imports and reporting	1-minute increments, hourly, daily, weekly, monthly, yearly	Hourly, daily, weekly	Daily, weekly, monthly, quarterly	5-minute increments, hourly, daily, monthly, yearly
Database Support:				
Built-in DBMS	● (Proprietary)	● (Access)	● (Unix comes with Informix)	● (Proprietary)
Attach to DBMS (ODBC)	● (SQL Server or Oracle7/8)	● (SQL Server)	● (SQL Server)	● (SQL Server or Oracle7/8)
Platform Support:				
Windows95/98	●	○	○	●
Windows NT	●	●	●	●
Unix	○	○	Solaris 2.5 or 2.6, AIX 4.1.x	○
Year 2000-compliant	●	●	Unknown	●

● Yes ○ No

Site Server includes an Access database run-time engine, but we chose to use SQL Server as our database for reports based on historical data. After we installed the latest ODBC (Open Database Connectivity) drivers, Site Server led us through the SQL Database setup, even determining how large our data store should be based on the size of our log file. Although this seems elementary, don't take it for granted: We had to run Marketwave's Hit List four times before we created a data store large enough to support our import. Once Site Server was installed, it was a snap to run reports, set up filters to improve performance and focus on any point of interest in the logs. The filter setup is included within the report wizard.

All the enterprise-level products we tested can be connected to an ODBC-compliant database. Importing log files into one of these databases gives administrators several performance advantages and allows them to tie log information to other customer information in their databases. For a more detailed explanation of the differences between enterprise-level products and standard log-analysis tools, see "Enterprise Solutions vs. Workgroup Solutions," on page 82.

Site Server's reports go beyond the scope of any competitor's. Most log-analysis tools break out domain information into the top six U.S. domain names and then international information. You may see that the Web site had X number of requests from *.com* domains, X number from *.org* domains and so on. Site Server reports on all this and adds ISPs to the mix; it also details the leading requests from each top-level domain, including Canada, Canadian ISPs and other international users.

We were slightly disappointed that Site Server does not offer intelligent error reporting. Web administrators need to see what errors users received while at the Web site, identify the pages that contain those errors and possibly learn what browsers the visitors were using when the errors were received.

Site Server edged out net.Analysis in import speed. It took approximately 31

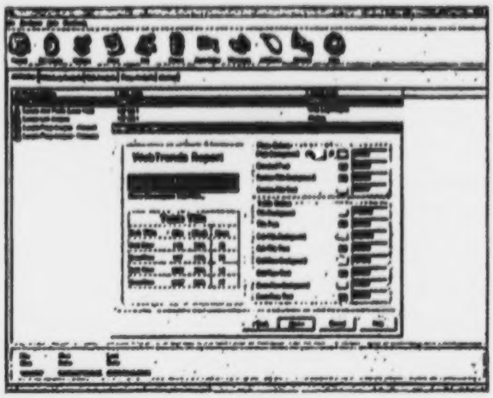
BEST COPY AVAILABLE

minutes; by comparison, Hit List needed 3 hours and 14 minutes. After all importing is done, Site Server shows the exact length of import time, which could prove useful when a network administrator is making up a schedule. Site Server also generates MS Word reports right before your eyes.

WebTrends Enterprise Suite Version 2.1

WebTrends Enterprise Suite's biggest asset is its ease of use. From installation through report generation, the software makes log analysis look simple. Its interface isn't quite as overwhelming as Site Server's, and it may be a better bet for Web sites that don't have a need for all of Site Server's bells and whistles.

Enterprise Suite performs well across the board, but one or two missing features keep it a few steps behind Site Server. First, it lacks support for multiple physical servers. With many enterprise Web sites now employing several Web servers within the organization (for example, *marketing.company.com* and *sales.company.com*), it is increasingly important to track a user's visit across different Web servers. Site Server, net.Analysis and Hit List are all up to the task; Enterprise Suite merely allows a user to stitch together log files for analysis.



You can customize Enterprise Suite's reports to match the look of your other business materials.

Alternatively, Enterprise Suite supports multiple Web sites reporting to one log file. If, for example, an ISP has multiple Web sites running on the same physical Web server, Enterprise Suite can differentiate between them and create customized reports for each site. The software's scheduling features let you create those reports and FTP them to your clients' accounts automatically.

Enterprise Suite includes ODBC connectivity along with WebTrends' proprietary FastTrends database. There's just one problem with the implementation: The only incentive to use FastTrends is its ability to track trends over time. Unlike the other products we tested, WebTrends does

Enterprise Solutions vs. Workgroup Solutions

No matter how you slice it, performing thousands of DNS lookups and hundreds of title lookups takes time. But at least when you log into a database, the information is stored for future use; by the second or third time you run your software, you'll see significant performance gains.

But let's face facts: Many Web sites do not receive millions of hits per day. Though you may be looking for an easier way to analyze your log traffic, a smaller operation may lack the computing power or software (specifically a relational database) to benefit from an enterprise solution. If so, workgroup software such as Aquas' Bazaar Analyzer Pro, Netrics.com's SurfReport, Sane Solutions' NetTracker and WebManage Technologies' NetIntellect may fit your needs.

These workgroup solutions have one important drawback compared with the enterprise log-analysis tools we tested: While they adequately analyze Web traffic and produce reports, they do not allow you to import your log files into an ODBC (Open Database Connectivity)-compliant back-end database.

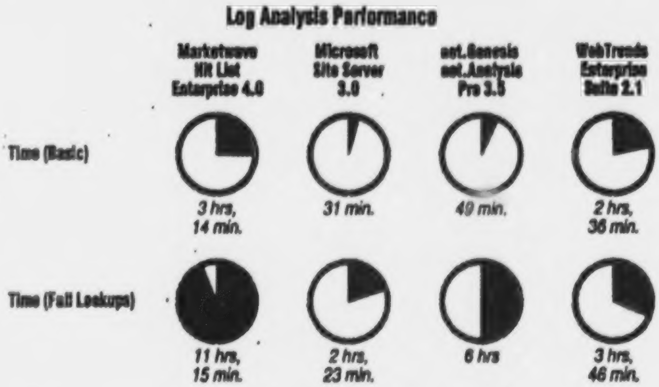
Using an ODBC database enables you to produce historical reports, which could help identify trends over time and provide a clearer picture of Web-site usage (such as keeping an ongoing record of the most frequently used keywords or a list of all the sites that link to your site). Finally, logging into an ODBC database lets you combine your log profiles with any other customer information you may have in a separate database.

BEST COPY AVAILABLE

Analyzing the Logs: How We Tested

We tested all products on a Dell Computer Corp. Optiplex Pentium II running at 300 MHz with 256 MB of RAM under the Windows NT Server 4.0 operating system. All logs were imported into Microsoft Corp.'s SQL Server 6.5 database.

The log files we tested ranged in size from 12 MB to a 1.2-GB proxy log (although none of the products could handle a file of this size). We obtained two of our log files from live corporate sites: one from a *Fortune* 100 company and another from a worldwide standards organization. For benchmark testing, we used a 100-MB log file that consisted of 111 million entries (more than 1 million hits)—a size indicative of what a large company might deal with if it were to rotate its log files on a daily basis.


Log Analysis Performance

We tested each product under two performance benchmarks. In both performance tests, each product imported the 100-MB log file into the SQL database. The first time through, we asked each product to import the log file, but not to look up page titles or DNS lookups. (We called this our basic import.) After clearing all databases, we imported the log file again, this time performing title and DNS lookups. (This was our full import.)

Page title lookups require the software to contact the Web server and retrieve the page titles from the actual HTML pages. DNS lookups take each IP address and attempt to resolve the domain name. Although title and DNS lookups can yield valuable information, as you can see from the results of the two performance tests we conducted, it may take twice as long, or even longer, to run these imports.

not cache the IP addresses and title lookups. On top of that, using SQL takes a toll on performance. It took 2 hours and 36 minutes to import a 100-MB log file into a SQL database without doing DNS and title lookups; the same log file under the same configuration took just eight minutes to analyze when a SQL database was not in use.

Enterprise Suite impressively breaks down every major search engine and reports on the top query strings from each. Enterprise Suite's reports are straightforward and comprehensive, and the software uses no additional filters.

Ease of use and fast analysis (without logging to a database) make Enterprise Suite well worth its $1,499 price tag. If you're looking for a software package to create quick, high-quality reports on Web-server activity, this one's for you.

net.Genesis Corp.
net.Analysis Pro 3.5

net.Genesis' net.Analysis Pro 3.5 offers very robust filters, including some aimed squarely at the enterprise market, but the package carries a hefty price tag. The NT version lists for $4,495, and the Unix version (for Solaris 2.5 or 2.6 or AIX 4.1.x) is tagged at a whopping $7,495 (including an Informix database). Then again, net.Analysis is the only package we tested that even has a Unix release.

We found net.Analysis' Web-based interface annoying. For example, to change a configuration option, you have to make the change and then click on an "OK" button every time. When you do, a new screen loads and asks if you want to save your changes. At first, this may seem comforting, but after clicking on 10 separate configuration options, the redundancy began to get on our nerves. Further redundancy hit during import, when the software asks a series of questions pertaining to the location and type of your log files. There were times when we were answering the same question twice.

net.Analysis produced the best technical reports of the software packages

BEST COPY AVAILABLE

we tested, and it is the only package to offer built-in reports that incorporate intelligent error checking. Hit List and Enterprise Suite report on the status code of errors, while Site Server can report only on errors using advanced filters. net.Analysis reports a status code, summary of errors and the pages on which users encountered the errors.

Like Site Server, net.Analysis has a wizard-based installation for the SQL Server, and it is intelligent enough to know how large the data store should be based on the size of your log files. Unfortunately, it seemed to take longer for net.Analysis to create the data store than if we had configured SQL Server manually.

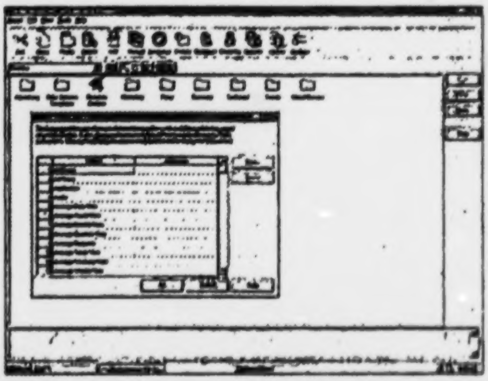
net.Analysis crunched away at a 100-MB log file (without DNS and title lookups while importing into SQL Server) in 49 minutes—only Site Server was faster. However, when we tried to do DNS and title lookups into SQL Server, the software hung on us twice. Both times it ran fine for the first four hours, and then our CPU utilization skyrocketed to 100 percent for hours. Ultimately, net.Analysis failed at this test, and the problems that resulted kept us from getting accurate readings for our performance worksheet. net.Genesis was unable to provide a fix by the time we went to press.

Perhaps in hopes of offsetting net.Analysis' clunky interface and complex setup, the vendor has a special service called FastStart aimed at enterprise users. For $2,000 a day for a two-day program, excluding travel expenses, net.Genesis will send a technician to deliver the product, install and configure it, run several imports and provide end-user training. Given the complexity of net.Analysis, it may be more of a necessity than a luxury.

Marketwave Corp.
Hit List Enterprise 4.0

Marketwave has quite a bit of work ahead of it before Hit List can truly compete with the other ODBC-compliant log-analysis tools we tested. Although Hit List worked with our SQL Server, setup was no picnic. Site Server, net.Analysis and Enterprise Suite all needed a data store roughly three times the size of the log file we wanted to import. Hit List did not have a database wizard, so we went ahead and created a 300-MB data store. When that didn't work, we created a 400-MB data store—no luck there either. Finally, at about 600 MB, the import worked. In conversations with Marketwave, we learned that Hit List isn't optimized for ODBC-compliant databases, and that ODBC connectivity is scheduled to be one of the key improvements in the next release.

While Hit List does create adequate reports, there is nothing within them that gives the product an edge on its competitors. For instance, Hit List can create advertising reports, but it will only count the clickthroughs if you first redirect them through a Marketwave script. Site Server, Enterprise Suite and net.Analysis all can create full advertising analysis with relative ease.



The Language Manager in Hit List Enterprise makes it easy to translate terms into different languages or non-technical language that makes sense to all users.

And the size of Hit List's database isn't its only problem. Importing the 100-MB log file into SQL Server and performing title and DNS lookups took more than 11 hours, or nearly eight hours longer than Enterprise Suite (and this doesn't take into account that net.Analysis crashed after four hours). Finally, at nearly $7,000, Hit List's pricing is out of the ballpark. ■

Jeffrey H. Rubin is an adjunct professor with the School of Information Studies at Syracuse University, and a consultant for Internet Consulting Services. Ricardo Reimundez is an independent contractor based in Syracuse, N.Y. Send your comments on this article to Rubin at jhrubin@istweb.syr.edu or Reimundez at ricardo@reimundez.com.

Vendor Information

Hit List Enterprise 4.0, $6,995, Marketwave Corp., (800) 521-8176, (206) 682-6801; fax (206) 682-6805. *info@marketwave.com* or *www.marketwave.com*

net.Analysis Pro 3.5, $7,495, (Solaris), $4,495 (Windows NT), net.Genesis Corp., (617) 577-9800; fax (617) 577-9850. *sales@netgen.com* or *www.netgen.com*

Site Server 3.0, $1,239 (one server/five clients), $2,109 (one server/25 clients), Microsoft Corp., (800) 426-9400, (425) 882-8080; fax (425) 936-7329. *www.microsoft.com/siteserver*

WebTrends Enterprise Suite version 2.1, $1,499, WebTrends Corp., (888) WEBTRENDS, (503) 294-7025; fax (503) 294-7130. *sales@webtrends.com* or *www.webtrends.com*

For more information on products tested in this issue, go to *www.networkcomputing.com/links.*

BEST COPY AVAILABLE

Appendix IV-2, Department Path Report

Appendix IV-2, Department Path Report

First date analyzed: 9/20/98
Last date analyzed: 9/26/98

Lists the top 5 first requests, then the top 10 second requests for each of the top first requests, then the top 10 third requests for each of the second requests.

First request Second request Third request	# of visits
/	
/	
/	574
/free/	10
/finaid.html	9
/inits.html	9
/about.html	8
/databases/ERIC_Digests/index/	8
/stats.html	8
/news.html	7
/pubs/EDInitiatives/98/98-09-11....	7
/topicsaz.html	7
Subtotal (/)	**647**
/finaid.html	
/offices/OPE/express.html	66
/DirectLoan/	61
/prog_info/SFA/StudentGuide/	34
/inits/hope/	31
/offices/OPE/	26
/offices/OPE/Professionals/	19
/funding.html	16
/pubs/	11
/stats.html	11
/EdRes/	9
Subtotal (/finaid.html)	**284**
/pubs/	
/pubs/edpubs.html	36
/pubs/pubdb.html	32
/newsletters.html	25
/pubs/parents.html	25
/pubs/legsregs.html	22
/pubs/studies.html	17
/BASISDB/EDPUB/search/SDF	12
/pubs/resdir.html	12

BEST COPY AVAILABLE

/pubs/collect.html	10
/pubs/	9
Subtotal (/pubs/)	**200**
/stats.html	
/stats.html	22
/topicsaz.html	22
/prog_info/ERIC/	21
/pubs/	20
/pubs/studies.html	16
/EdRes/	15
/databases/ERIC_Digests/index/	13
/NLE/	12
/	9
/offices/OERI/	9
Subtotal (/stats.html)	**159**
/programs.html	
/Welcome/overview.html	60
/BASISDB/EROD/direct/SF	31
/pubs/legsregs.html	21
/EdRes/	18
/topicsaz.html	16
/about.html	13
/pubs/	13
/stats.html	13
/	12
/funding.html	10
Subtotal (/programs.html)	**207**
/EdRes/	
/Programs/bastmp/SEA.htm	33
/EdRes/EdFed/OtherED.html	20
/EdRes/EdFed/ERIC.html	19
/EdRes/EdSupport.html	17
/topicsaz.html	17
/EdRes/EdCurric.html	12
/programs.html	12
/	11
/EdRes/EdAssoc.html	10
/stats.html	9
Subtotal (/EdRes/)	**160**
/free/	
/free/subject.html	97
/free/what.html	70

BEST COPY AVAILABLE

/free/sitemap.html	22
/funding.html	11
/free/kids.html	6
/free/s-lanart.html	6
/	5
/databases/ERIC_Digests/index/	5
/free/s-edtech.html	5
/finaid.html	4
Subtotal (/free/)	**231**
/funding.html	
/offices/OPE/Funding/	41
/legislation/FedRegister/	40
/finaid.html	32
/pubs/KnowAbtGrants/	22
/offices/OBEMLA/funding.html	14
/legislation/FedRegister/announc...	13
/funding.html	12
/	9
/about.html	7
/news.html	7
Subtotal (/funding.html)	**197**
/topicsaz.html	
/topicsaz/	88
/topicsaz/topicsqz.html	55
/topicsaz/topicsip.html	46
/EdRes/	5
/	4
/topicsaz.html	4
/offices/OERI/BlueRibbonSchools/	3
/offices/OM/edjobs.html	3
/programs.html	3
/dirs.html	2
Subtotal (/topicsaz.html)	**213**
/pubs/EDInitiatives/98/98-09-11.html	
/pubs/bbecho98/	26
/PressReleases/08-1998/wh-0831.html	20
/inits.html	13
/pubs/TeachersLead/	13
/stats.html	13
/funding.html	12
/pubs/EDInitiatives/	12
/news.html	8

/pubs/EDInitiatives/98/98-02-06....	8
/pubs/EDInitiatives/98/98-08-28....	8
Subtotal (/pubs/EDInitiatives/98/98-0...)	**133**
Subtotal (/)	**2,431**
/offices/OPE/Students/	
/offices/OPE/Students/apply.html	
/offices/OPE/express.html	215
/BASISDB/TITLE4/search/sf	27
/offices/OPE/Students/	12
/PDFDocs/98fafsafinal/form.pdf	10
/prog_info/SFA/FAFSA/	8
/BASISDB/TITLEIV/search/SDF	5
/offices/OPE/Students/apply.html	4
/offices/OPE/Students/apply/fexp...	3
/offices/OPE/Students/student.html	3
/	2
Subtotal (/offices/OPE/Students/apply...)	**289**
/BASISDB/TITLE4/search/sf	
/BASISDB/TITLEIV/search/SDF	232
/BASISDB/TITLEIV/search/DDW	20
/BASISDB/TITLEIV/search/SF	11
/BASISDB/TITLE4/search/sf	10
/offices/OPE/express.html	8
/offices/OPE/Students/apply.html	6
/offices/OPE/Students/	3
/BASISV8/dnload/schoolcode.zip	2
/offices/OPE/Students/fedaid.html	2
Subtotal (/BASISDB/TITLE4/search/sf)	**294**
/offices/OPE/Students/student.html	
/prog_info/SFA/FYE/	55
/prog_info/SFA/LSA/	29
/prog_info/SFA/StudentGuide/	25
/DirectLoan/	16
/offices/OPE/Students/	13
/offices/OPE/Students/other.html	12
/offices/OPE/Students/apply.html	11
/offices/OPE/express.html	7
/prog_info/SFA/StudentGuide/1998-9/	6
/offices/OPE/Partners/	4
Subtotal (/offices/OPE/Students/stude...)	**178**
/offices/OPE/Students/	
/offices/OPE/Students/apply.html	20

/offices/OPE/Students/student.html	12
/BASISDB/TITLE4/search/sf	9
/offices/OPE/Professionals/	6
/offices/OPE/express.html	5
/offices/OPE/Students/	5
/	4
/BASISDB/TITLEIV/search/SDF	3
/offices/OPE/Partners/	3
/offices/OPE/Students/fedaid.html	3
Subtotal (/offices/OPE/Students/)	**70**
/BASISDB/TITLEIV/search/SDF	
/BASISDB/TITLEIV/search/SDF	38
/BASISDB/TITLEIV/search/DDW	18
/BASISDB/TITLEIV/search/SF	13
/offices/OPE/Students/fedaid.html	3
/offices/OPE/Students/apply.html	2
Subtotal (/BASISDB/TITLEIV/search/SDF)	**74**
/offices/OPE/Students/fedaid.html	
/offices/OPE/Students/	11
/offices/OPE/Students/apply.html	11
/offices/OPE/Students/student.html	8
/offices/OPE/Partners/	6
/offices/OPE/Students/help.html	4
/offices/OPE/DCS/	2
/offices/OPE/Professionals/	2
/offices/OPE/Students/fedaid.html	2
/offices/OPE/Students/hopegd.html	2
/prog_info/SFA/FYE/	2
Subtotal (/offices/OPE/Students/fedai...)	**50**
/offices/OPE/express.html	
/offices/OPE/Students/apply/fexp...	9
/PDFDocs/98fafsafinal/form.pdf	9
/BASISDB/TITLE4/search/sf	5
/offices/OPE/express.html	5
/offices/OPE/Students/apply.html	5
/offices/OPE/Students/	4
/offices/OPE/Students/fedaid.html	2
Subtotal (/offices/OPE/express.html)	**39**
/offices/OPE/Students/hopegd.html	
/offices/OPE/Students/student.html	11
/offices/OPE/Students/apply.html	8
/offices/OPE/Students/	7

BEST COPY AVAILABLE

/offices/OPE/Students/fedaid.html	2
/offices/OPE/Students/help.html	2
/offices/OPE/Students/hopegd.html	2
Subtotal (/offices/OPE/Students/hopeg...)	**32**
/offices/OPE/Students/help.html	
/offices/OPE/Students/	8
/offices/OPE/Students/apply.html	3
/offices/OPE/Students/student.html	3
/offices/OPE/express.html	2
/offices/OPE/Partners/	2
/offices/OPE/Professionals/	2
/offices/OPE/Students/fedaid.html	2
Subtotal (/offices/OPE/Students/help....)	**22**
/	
/offices/OPE/Students/apply.html	5
/finaid.html	4
/BASISDB/TITLE4/search/sf	3
/	2
/offices/OPE/express.html	2
/offices/OPE/Students/	2
/offices/OPE/Students/student.html	2
/prog_info/SFA/StudentGuide/	2
Subtotal (/)	**22**
Subtotal (/offices/OPE/Students/)	**1,070**
/prog_info/SFA/StudentGuide/	
/prog_info/SFA/StudentGuide/1998-9/	
/prog_info/SFA/StudentGuide/1998...	293
/prog_info/SFA/StudentGuide/1998...	32
/prog_info/SFA/StudentGuide/1998...	23
/prog_info/SFA/StudentGuide/1998...	18
/offices/OPE/express.html	15
/prog_info/SFA/StudentGuide/1998-9/	15
/prog_info/SFA/StudentGuide/1998...	11
/PDFDocs/StdGde98.pdf	10
/offices/OPE/Students/student.html	9
/prog_info/SFA/StudentGuide/1998...	9
Subtotal (/prog_info/SFA/StudentGuide...)	**435**
/offices/OPE/express.html	
/offices/OPE/Students/	25
/PDFDocs/98fafsafinal/form.pdf	21
/offices/OPE/Students/apply/fexp...	14
/prog_info/SFA/StudentGuide/1998-9/	8

BEST COPY AVAILABLE

/offices/OPE/express.html	7
/offices/OPE/Students/apply/dwnl...	7
/PDFDocs/98fafsafinal/inst.pdf	7
/	4
./offices/OPE/home.html	2
/offices/OPE/Students/apply.html	2
Subtotal (/offices/OPE/express.html)	**97**
/prog_info/SFA/StudentGuide/1998-9/S...	
/prog_info/SFA/StudentGuide/1998...	19
/prog_info/SFA/StudentGuide/1998-9/	12
/prog_info/SFA/StudentGuide/1998...	9
/prog_info/SFA/StudentGuide/1998...	7
/prog_info/SFA/StudentGuide/1998...	7
/prog_info/SFA/StudentGuide/1998...	6
/prog_info/SFA/StudentGuide/1998...	5
/offices/OPE/Students/student.html	4
/offices/OPE/express.html	3
/PDFDocs/StdGde98.pdf	3
Subtotal (/prog_info/SFA/StudentGuide...)	**75**
/offices/OPE/Students/	
/offices/OPE/Students/student.html	15
/offices/OPE/Students/apply.html	5
/offices/OPE/Professionals/	4
/offices/OPE/Students/fedaid.html	4
/offices/OPE/Students/help.html	4
/prog_info/SFA/FYE/	4
/prog_info/SFA/StudentGuide/1998-9/	4
/	3
/offices/OPE/Funding/	3
/offices/OPE/Students/	3
Subtotal (/offices/OPE/Students/)	**49**
/	
/offices/OPE/express.html	3
/prog_info/SFA/StudentGuide/1998-9/	3
/	2
/finaid.html	2
/prog_info/SFA/StudentGuide/1998...	2
Subtotal (/)	**12**
/offices/OPE/Students/apply/fexpress...	
/offices/OPE/Students/apply/dwnl...	4
/PDFDocs/98fafsafinal/form.pdf	2
Subtotal (/offices/OPE/Students/apply...)	**6**

BEST COPY AVAILABLE

/prog_info/SFA/StudentGuide/1998-9/e...	
/prog_info/SFA/StudentGuide/1998...	4
/prog_info/SFA/StudentGuide/1998...	2
Subtotal (/prog_info/SFA/StudentGuide...)	**6**
/offices/OPE/Students/student.html	
/DirectLoan/	2
/offices/OPE/Students/hopegd.html	2
/prog_info/SFA/FYE/	2
Subtotal (/offices/OPE/Students/stude...)	**6**
/prog_info/SFA/StudentGuide/1998-9/f...	
/prog_info/SFA/StudentGuide/1998...	5
Subtotal (/prog_info/SFA/StudentGuide...)	**5**
/prog_info/SFA/	
/prog_info/SFA/FYE/	2
/prog_info/SFA/LSA/	2
Subtotal (/prog_info/SFA/)	**4**
Subtotal (/prog_info/SFA/StudentGuide/)	**695**
/free/	
/free/subject.html	
/free/s-scienc.html	53
/free/s-edtech.html	49
/free/s-social.html	40
/free/s-math.html	34
/free/s-lanart.html	31
/free/s-arts.html	24
/free/s-voced.html	20
/free/s-forlan.html	17
/free/s-health.html	15
/free/subject.html	13
Subtotal (/free/subject.html)	**296**
/free/what.html	
/free/sitemap.html	68
/free/subject.html	68
/free/kids.html	11
/free/s-social.html	9
/free/	7
/free/partner.html	5
/free/s-edtech.html	5
/free/what.html	5
/pubs/parents/internet/	5
/free/s-all.html	4
Subtotal (/free/what.html)	**187**

BEST COPY AVAILABLE

/free/sitemap.html	
/free/s-edtech.html	10
/free/s-social.html	10
/free/subject.html	8
/free/s-math.html	7
/free/	5
/free/favorite.html	5
/free/s-lanart.html	5
/free/s-arts.html	4
/free/teachers.html	4
/free/comment.html	3
Subtotal (/free/sitemap.html)	**61**
/free/	
/free/	8
/free/subject.html	7
/free/what.html	3
/offices/OESE/compreform/	3
/free/s-voced.html	2
/free/sitemap.html	2
Subtotal (/free/)	**25**
/	
/	5
/free/	2
/free/kids.html	2
/free/what.html	2
/Technology/	2
Subtotal (/)	**13**
/free/kids.html	
/free/subject.html	6
/free/what.html	2
Subtotal (/free/kids.html)	**8**
/free/tell-us.html	
/free/kids.html	3
/free/subject.html	3
Subtotal (/free/tell-us.html)	**6**
/pubs/	
/pubs/studies.html	2
/BASISDB/EDPUB/search/SDF	1
/pubs/edpubs.html	1
/pubs/pubdb.html	1
/pubs/resdir.html	1
Subtotal (/pubs/)	**6**

BEST COPY AVAILABLE

/pubs/parents/internet/	
/pubs/parents/internet/	2
/free/s-health.html	1
/pubs/parents/internet/message.html	1
/pubs/parents/internet/support.html	1
/pubs/parents/internet/title.html	1
Subtotal (/pubs/parents/internet/)	**6**
/free/s-lanart.html	
/inits/americareads/	3
/inits/americareads/readwnow.html	2
Subtotal (/free/s-lanart.html)	**5**
Subtotal (/free/)	**613**
/offices/OPE/express.html	
/offices/OPE/Students/apply/fexpress...	
/offices/OPE/Students/apply/dwnl...	141
/PDFDocs/98fafsafinal/form.pdf	6
/	4
/offices/OPE/express.html	4
/offices/OPE/Students/	4
/offices/OPE/Students/apply/fexp...	4
/prog_info/SFA/StudentGuide/	2
/prog_info/SFA/StudentGuide/1998-9/	2
/offices/OPE/Professionals/	1
Subtotal (/offices/OPE/Students/apply...)	**168**
/PDFDocs/98fafsafinal/form.pdf	
/PDFDocs/98fafsafinal/inst.pdf	66
/PDFDocs/98fafsafinal/form.pdf	29
/offices/OPE/Students/	13
/offices/OPE/Students/apply/fexp...	9
/offices/OPE/express.html	5
/offices/OPE/Students/apply.html	2
/offices/OPE/Students/student.html	2
/	1
/BASISDB/TITLE4/search/sf	1
/DirectLoan/consolid.html	1
Subtotal (/PDFDocs/98fafsafinal/form.pdf)	**129**
/offices/OPE/Students/	
/offices/OPE/Students/student.html	28
/offices/OPE/Students/apply.html	26
/offices/OPE/Students/fedaid.html	14
/offices/OPE/Students/hopegd.html	11
/BASISDB/TITLE4/search/sf	5

/offices/OPE/Students/help.html	5
/offices/OPE/Partners/	4
/offices/OPE/Students/	4
/PDFDocs/98fafsafinal/form.pdf	4
/	3
Subtotal (/offices/OPE/Students/)	**104**
/PDFDocs/98fafsafinal/inst.pdf	
/PDFDocs/98fafsafinal/inst.pdf	14
/PDFDocs/98fafsafinal/form.pdf	9
/offices/OPE/Students/	5
/offices/OPE/express.html	2
/funding.html	1
/offices/OPE/Students/hopegd.html	1
/offices/OPE/Students/student.html	1
/prog_info/SFA/StudentGuide/1998-9/	1
/prog_info/SFA/StudentGuide/1998...	1
Subtotal (/PDFDocs/98fafsafinal/inst.pdf)	**35**
/offices/OPE/express.html	
/PDFDocs/98fafsafinal/form.pdf	8
/offices/OPE/express.html	4
/offices/OPE/Students/apply/fexp...	3
/offices/OPE/Students/apply/dwnl...	2
/	1
/DirectLoan/students.html	1
/EdRes/EdFed/	1
/offices/OPE/Students/	1
/PDFDocs/98fafsafinal/inst.pdf	1
Subtotal (/offices/OPE/express.html)	**22**
/	
/	3
/offices/OPE/express.html	3
/PDFDocs/98fafsafinal/form.pdf	3
/PDFDocs/98fafsafinal/inst.pdf	2
/BASISDB/TITLE4/search/sf	1
/BASISDB/TITLEIV/search/SF	1
/finaid.html	1
/offices/OPE/	1
/offices/OPE/Students/apply/fexp...	1
/prog_info/SFA/StudentGuide/	1
Subtotal (/)	**17**
/offices/OPE/Students/student.html	
/prog_info/SFA/LSA/	5

BEST COPY AVAILABLE

/prog_info/SFA/FYE/	4
/DirectLoan/	1
/offices/OPE/Students/fedaid.html	1
/offices/OPE/Students/file4b.html	1
/offices/OPE/Students/student.html	1
/prog_info/SFA/StudentGuide/	1
Subtotal (/offices/OPE/Students/stude...)	**14**
/offices/OPE/Students/apply/dwnload9...	
/offices/OPE/Students/	2
/offices/OPE/Students/apply/fexp...	2
/	1
/databases/ERIC_Digests/ed414521...	1
/offices/OPE/express.html	1
/offices/OPE/Students/fedaid.html	1
/offices/OPE/Students/help.html	1
/PDFDocs/98fafsafinal/form.pdf	1
/prog_info/ERIC/	1
/prog_info/SFA/FYE/stafford.html	1
Subtotal (/offices/OPE/Students/apply...)	**12**
/offices/OPE/	
/offices/OPE/express.html	2
/offices/OPE/	1
/offices/OPE/finaid.html	1
/offices/OPE/home.html	1
/offices/OPE/Partners/	1
/offices/OPE/Professionals/	1
/offices/OPE/Students/	1
/offices/OPE/Students/apply/dwnl...	1
/offices/OPE/Students/other.html	1
/prog_info/SFA/StudentGuide/	1
Subtotal (/offices/OPE/)	**11**
/prog_info/SFA/StudentGuide/	
/prog_info/SFA/StudentGuide/1998-9/	3
/prog_info/SFA/StudentGuide/1998...	2
/DirectLoan/	1
/offices/OPE/DCS/	1
/offices/OPE/express.html	1
/offices/OPE/Students/	1
/offices/OPE/Students/student.html	1
Subtotal (/prog_info/SFA/StudentGuide/)	**10**
Subtotal (/offices/OPE/express.html)	**522**
Total (First requests)	**5,331**

BEST COPY AVAILABLE

Appendix IV-3, HTML Search Form using GET

Appendix IV-3. HTML Search Form using GET

```
<form action="http://165.224.220.67:8765/results.html" method="GET">
<input type="hidden" name="col" value="site misc"><input type="hidden"
name="qc" value="0">
<!-- This is the table used only for the search form -->
<table border="0" cellpadding="1" cellspacing="1" width="85%">
<tr>
<td>Find</td>
<td><select name="qp" size="1">
<option value="site:ed.gov url:~edoig url:~zsudiak" selected>any
documents</option>
<option value="url:legislation/ESEA
url:legislation/GOALS2000">legislative texts </option>
<option value="url:legislation/FedRegister">Federal Register documents
</option>
<option value="url:PressReleases">press releases </option>
<option value="url:databases/Eric_Digests">ERIC Digests </option>
<option value="url:nces.ed.gov">National Center for Education
Statistics documents </option>
<option value="url:MailingLists/EDInfo">EDInfo mailing list messages
</option>
</select> </td>
</tr>
<tr>
<td>That contain:</td>
<td><input type="text" name="qt" size="44"> </td>
</tr>
<tr>
<td><br></td>
<td><input type="submit" value="Find">
<a href="http://165.224.220.67:8765/help/">(Help with search)</a> </td>
</tr>
</table>
<!-- End of search form related table -->
</form>
```

BEST COPY AVAILABLE

Appendix IV-4, U.S. Department of Education Search Results Using GET

USER URL IS: http://165.224.220.67:8765/results.html?col=site+misc&qc=0&qp=site%3Aed.gov+url%3A%7Eedoig+url%3A%7Ezsudiak&qt=Drug+Programs

7030 results found, top 100 sorted by relevance, for Drug Programs.
1-10

OSERS - RSA Training Program: Rehabilitation Counseling
The usual educational requirements for a position as a Rehabilitation Counselor is a Master's degree. To obtain a Master's degree in Rehabilitation
Counseling,...
http://www.ed.gov/offices/OSERS/RSA/PGMS/RT/carcouns.html - size 4.3K - U.S. Department of Education
70%

Creating Safe and Drug-Free Schools: Table of Contents
For the user's convenience, this document is also available in Portable Document Format (331K) from the National Criminal Justice Reference
System (NCJRS)...
http://www.ed.gov/offices/OESE/ACTGUID/index.html - size 2.7K - U.S. Department of Education
59%

Facts on Safe and Drug-Free Schools
Nearly 3 million thefts and violent crimes occur on or near school campuses every year. This equates to almost 16,000 incidents per school day or
one every...
http://www.ed.gov/updates/fact-209.html - size 12.9K - U.S. Department of Education
56%

05/06/97: Safe and Drug-Free Schools and Communities National Programs [OESE]
From the Federal Register Online via GPO Access [wais.access.gpo.gov] [DOCID:fr06my97-104] -- DEPARTMENT OF EDUCATION [CFDA
Nos.: 84.184F, 84.184G, ...
http://www.ed.gov/legislation/FedRegister/announcements/1997-2/050697d.html - size 7.6K - U.S. Department of Education
55%

08/19/97: Notice extending application deadline for the Safe and Drug-Free Schools and ...
From the Federal Register Online via GPO Access [wais.access.gpo.gov] [DOCID:fr19au97-28] == -- DEPARTMENT OF EDUCATION
[CFDA No. 84.184F; 84.184G; ...
http://www.ed.gov/legislation/FedRegister/announcements/1997-3/081997b.html - size 2.8K - U.S. Department of Education
55%

BEST COPY AVAILABLE

Drug Prevention Programs in Higher Education
Chapter 534 Drug Prevention Programs in Higher Education (CFDA No. 84.183) I. Program Profile
Legislation: Title IV, Part D (Section 5131) of
the Safe...
http://www.ed.gov/pubs/Biennial/534.html - size 11.9K - U.S. Department of Education
54%

Drug-Free Schools and Communities State and Local Programs
Part B (sections 5121-5127) of the Drug-Free Schools and Communities Act (DFSCA) of 1986, as amended (20 U.S.C. 3191-3197) (expires
September 30, 1999)....
http://www.ed.gov/pubs/Biennial/115.html - size 7.2K - U.S. Department of Education
54%

07/22/98: Office of Elementary and Secondary Education--Safe and Drug-Free Schools and ...
From the Federal Register Online via GPO Access [wais.access.gpo.gov] [DOCID:fr22jy98-111] [[Page 39449]] -- DEPARTMENT OF
EDUCATION [CDFA ...
http://www.ed.gov/legislation/FedRegister/announcements/1998-3/072298c.html - size 7.3K - U.S. Department of Education
54%

05/06/97: Safe and Drug-Free Schools and Communities National Programs [OESE]
From the Federal Register Online via GPO Access [wais.access.gpo.gov] [DOCID:fr06my97-103] --
DEPARTMENT OF EDUCATION Safe
and Drug-Free Schools and Communities...
http://www.ed.gov/legislation/FedRegister/finrule/1997-2/050697c.html - size 21.5K - U.S. Department of Education
54%

ED341886 31 Dec 91 Are School-Based Drug Prevention Programs Working? ERIC Digest.
Author: Mohai, Caroline E. ERIC Clearinghouse on Counseling and Personnel Services, Ann Arbor, Mich.
THIS DIGEST WAS CREATED BY
ERIC, THE EDUCATIONAL RESOURCES...
http://www.ed.gov/databases/ERIC_Digests/ed341886.html - size 11.7K - U.S. Department of Education
54%

BEST COPY AVAILABLE

Appendix IV-5, HTML Search Form using POST

Appendix IV-5, HTML Search Form using POST

```
<form action="http://165.224.220.67:8765/results.html" method="POST">
<input type="hidden" name="col" value="site misc"><input type="hidden"
name="qc" value="0">
<!-- This is the table used only for the search form -->
<table border="0" cellpadding="1" cellspacing="1" width="85%">
<tr>
<td>Find</td>
<td><select name="qp" size="1">
<option value="site:ed.gov url:~edoig url:~zsudiak" selected>any
documents</option>
<option value="url:legislation/ESEA
url:legislation/GOALS2000">legislative texts </option>
<option value="url:legislation/FedRegister">Federal Register documents
</option>
<option value="url:PressReleases">press releases </option>
<option value="url:databases/Eric_Digests">ERIC Digests </option>
<option value="url:nces.ed.gov">National Center for Education
Statistics documents </option>
<option value="url:MailingLists/EDInfo">EDInfo mailing list messages
</option>
</select> </td>
</tr>
<tr>
<td>That contain:</td>
<td><input type="text" name="qt" size="44"> </td>
</tr>
<tr>
<td><br></td>
<td><input type="submit" value="Find">
<a href="http://165.224.220.67:8765/help/">(Help with search)</a> </td>
</tr>
</table>
<!-- End of search form related table -->
</form>
```

BEST COPY AVAILABLE

Appendix IV-6, U.S. Department of Education Search Results Using POST

Appendix IV-6, U.S. Department of Education Search Results Using POST

USER URL IS: http://165.224.220.67:8765/results.html

7030 results found, top 100 sorted by relevance, for Drug Programs.
1-10

OSERS - RSA Training Program: Rehabilitation Counseling
The usual educational requirements for a position as a Rehabilitation Counselor is a Master's degree. To obtain a Master's degree in Rehabilitation
Counseling,...
http://www.ed.gov/offices/OSERS/RSA/PGMS/RT/carcouns.html - size 4.3K - U.S. Department of Education
70%

Creating Safe and Drug-Free Schools: Table of Contents
For the user's convenience, this document is also available in Portable Document Format (331K) from the National Criminal Justice Reference
System (NCJRS)...
http://www.ed.gov/offices/OESE/ACTGUID/index.html - size 2.7K - U.S. Department of Education
59%

Facts on Safe and Drug-Free Schools
Nearly 3 million thefts and violent crimes occur on or near school campuses every year. This equates to almost 16,000 incidents per school day or
one every...
http://www.ed.gov/updates/fact-209.html - size 12.9K - U.S. Department of Education
56%

05/06/97: Safe and Drug-Free Schools and Communities National Programs [OESE]
From the Federal Register Online via GPO Access [wais.access.gpo.gov] [DOCID:fr06my97-104] -- DEPARTMENT OF EDUCATION [CFDA
Nos.: 84.184F, 84.184G, ...
http://www.ed.gov/legislation/FedRegister/announcements/1997-2/050697d.html - size 7.6K - U.S. Department of Education
55%

08/19/97: Notice extending application deadline for the Safe and Drug-Free Schools and ...
From the Federal Register Online via GPO Access [wais.access.gpo.gov] [DOCID:fr19au97-28] == -- DEPARTMENT OF EDUCATION
[CFDA No. 84.184F; 84.184G; ...
http://www.ed.gov/legislation/FedRegister/announcements/1997-3/081997b.html - size 2.8K - U.S. Department of Education
55%

BEST COPY AVAILABLE

Chapter 534 Drug Prevention Programs in Higher Education (CFDA No. 84.183) I. Program Profile
Legislation: Title IV, Part D (Section 5131) of
the Safe...
http://www.ed.gov/pubs/Biennial/534.html - size 11.9K - U.S. Department of Education
54%

Drug-Free Schools and Communities State and Local Programs
Part B (sections 5121-5127) of the Drug-Free Schools and Communities Act (DFSCA) of 1986, as amended (20 U.S.C. 3191-3197) (expires
September 30, 1999)....
http://www.ed.gov/pubs/Biennial/115.html - size 7.2K - U.S. Department of Education
54%

07/22/98: Office of Elementary and Secondary Education--Safe and Drug-Free Schools and ...
From the Federal Register Online via GPO Access [wais.access.gpo.gov] [DOCID:fr22jy98-111] [[Page 39449]] -- DEPARTMENT OF
EDUCATION [CDFA ...
http://www.ed.gov/legislation/FedRegister/announcements/1998-3/072298c.html - size 7.3K - U.S. Department of Education
54%

05/06/97: Safe and Drug-Free Schools and Communities National Programs [OESE]
From the Federal Register Online via GPO Access [wais.access.gpo.gov] [DOCID:fr06my97-103] -- DEPARTMENT OF EDUCATION Safe
and Drug-Free Schools and Communities...
http://www.ed.gov/legislation/FedRegister/finrule/1997-2/050697c.html - size 21.5K - U.S. Department of Education
54%

ED341886 31 Dec 91 Are School-Based Drug Prevention Programs Working? ERIC Digest.
Author: Mohai, Caroline E. ERIC Clearinghouse on Counseling and Personnel Services, Ann Arbor, Mich.
THIS DIGEST WAS CREATED BY
ERIC, THE EDUCATIONAL RESOURCES...
http://www.ed.gov/databases/ERIC_Digests/ed341886.html - size 11.7K - U.S. Department of Education
54%

BEST COPY AVAILABLE

Appendix IV-7. OESE Pages and Images Not Found

Appendix IV-7, OESE Pages and Images Not Found

Pages Not Found

http://www.ncbe.gwu.edu/obemla/tan/ - Is Referenced By:
    http://www.ed.gov/offices/OESE/asst.html

http://www.neca.org/funds - Is Referenced By:
    http://www.ed.gov/offices/OESE/hot.html

http://www.ed.gov/offices/OESE/news_archive/contact.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/news_archive/1-97.html

http://www.ed.gov/offices/legislation/FedRegister/announcements/1996-4/122796a.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/news_archive/2-97.html

http://www.ed.gov/offices/OESE/news_archive/ACTGUID/index.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/news_archive/4-97.html

http://www.ncbe.gwu.edu/iasconferences/registration.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/events_archive/index.html

http://www.ncbe.gwu.edu/iasconferences/regform.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/events_archive/index.html

http://www.ed.gov/legislation/GOALS2000/The Act/intro.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/leg_reg.html

http://www.ed.gov/offices/OESE/MEP/event.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/MEP/events.html

http://www.ed.gov/offices/OESE/CEP/happening.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/CEP/may22.html
    http://www.ed.gov/offices/OESE/CEP/may22.html
    http://www.ed.gov/offices/OESE/CEP/may15.html
    http://www.ed.gov/offices/OESE/CEP/may15.html

http://www.ed.gov/offices/OESE/MEP/PrelimGuide/legislation/ESEA/sec1111.html - Is Referenced By:
    http://www.ed.gov/offices/OESE/MEP/PrelimGuide/pt1a.html

http://www.ed.gov/legislation/ESEA/disadvan/times495.html" - Is Referenced By:
    http://www.ed.gov/offices/OESE/MEP/PrelimGuide/brochure.html

BEST COPY AVAILABLE

http://www.ed.gov/offices/OESE/MEP/PrelimGuide/www.ed.gov/offices/OESE - Is Referenced By:
http://www.ed.gov/offices/OESE/MEP/PrelimGuide/brochure.html

http://www.nwrel.org/national/regional-labs.html - Is Referenced By:
http://www.ed.gov/offices/OESE/MEP/PrelimGuide/appendix.html

http://www.enc.org/consortia.html - Is Referenced By:
http://www.ed.gov/offices/OESE/MEP/PrelimGuide/appendix.html

http://www.ed.gov/offices/OESE/StandardsAssessment/toc.html - Is Referenced By:
http://www.ed.gov/offices/OESE/StandardsAssessment/perfbased.html
http://www.ed.gov/offices/OESE/StandardsAssessment/perftask.html
http://www.ed.gov/offices/OESE/StandardsAssessment/migrant.html
http://www.ed.gov/offices/OESE/StandardsAssessment/migrant.html
http://www.ed.gov/offices/OESE/StandardsAssessment/multiple.html
http://www.ed.gov/offices/OESE/StandardsAssessment/multiple.html
http://www.ed.gov/offices/OESE/StandardsAssessment/measure.html
http://www.ed.gov/offices/OESE/StandardsAssessment/measure.html
http://www.ed.gov/offices/OESE/StandardsAssessment/multms.html
http://www.ed.gov/offices/OESE/StandardsAssessment/sample.html
http://www.ed.gov/offices/OESE/StandardsAssessment/sample.html
http://www.ed.gov/offices/OESE/StandardsAssessment/local.html

http://www.ed.gov/offices/OESE/StandardsAssessment/ndex.html - Is Referenced By:
http://www.ed.gov/offices/OESE/StandardsAssessment/approach.html

BEST COPY AVAILABLE

Images Not Found

http://www.ed.gov/offices/OESE/news_archive/bkg.gif - Is Referenced By:
    http://www.ed.gov/offices/OESE/news_archive/1-98.html
    http://www.ed.gov/offices/OESE/news_archive/2-98.html
    http://www.ed.gov/offices/OESE/news_archive/1-97.html
    http://www.ed.gov/offices/OESE/news_archive/2-97.html
    http://www.ed.gov/offices/OESE/news_archive/3-97.html
    http://www.ed.gov/offices/OESE/news_archive/4-97.html
    http://www.ed.gov/offices/OESE/news_archive/7-97.html

http://www.ed.gov/offices/OESE/events_archive/bkg.gif - Is Referenced By:
    http://www.ed.gov/offices/OESE/events_archive/index.html

http://www.ed.gov/offices/OESE/magnet/msap_ap0.gif - Is Referenced By:
    http://www.ed.gov/offices/OESE/magnet/cover.html

http://www.ed.gov/offices/OESE/StandardsAssessment/guidan23.gif - Is Referenced By:
    http://www.ed.gov/offices/OESE/StandardsAssessment/trans.html

http://www.ed.gov/offices/OESE/StandardsAssessment/guidan26.gif - Is Referenced By:
    http://www.ed.gov/offices/OESE/StandardsAssessment/acct.html

http://www.ed.gov/offices/OESE/StandardsAssessment/guidan27.gif - Is Referenced By:
    http://www.ed.gov/offices/OESE/StandardsAssessment/acct.html

http://www.ed.gov/offices/OESE/CEP/hands/happening_1.gif - Is Referenced By:
    http://www.ed.gov/offices/OESE/CEP/may22.html
    http://www.ed.gov/offices/OESE/CEP/may15.html

http://www.ed.gov/offices/OESE/StandardsAssessment/guidan25.gif - Is Referenced By:
    http://www.ed.gov/offices/OESE/StandardsAssessment/id.html

BEST COPY AVAILABLE

Appendix IV-8, Text of Suck.com Publication:
http://www.suck.com/daily/98/09/22/daily.html

Appendix IV-8, Text of Suck.com Publication: *http://www.suck.com/daily/98/09/22/daily.html*

Suck.

"a fish, a barrel, and a smoking gun"

for 22 September 1998. Updated every WEEKDAY.

Online: *http://www.suck.com/daily/98/09/22/daily.html*

Clown Act

Lose the "the," and it costs just short of a billion dollars a word: The Safe and Drug-Free Schools and Communities Act. Now 12 years old, it has allocated nearly US$6 billion of federal money to state and local governments for the purpose of - well, guess. Who could argue? Last time we checked, not too many anti-school-safety advocates were working the halls of Congress or making the rounds of the Sunday morning talk shows. Then, of course, there's the fact that schools really are a great deal safer today than they were 12 years ago, a distant era when the student body was less able to mount a decisive, armed defense.

Just how safe are they? Ask Ralph Frammolino, the Los Angeles Times reporter who recently bothered to investigate how all that money was spent - a question with an awfully long answer. There's the "clown act promoting bicycle safety" in Arkansas, the $1,000 in bait and poles for field trips to a fishing hole in Utah, the $6,500 remote-controlled toy police car in Louisiana, the dunking booths in Pennsylvania, the new Pontiac Grand Prix for the always-stylish cops at the Los Angeles Unified School District. There's Miss Louisiana singing the theme song from Titanic to some unlucky children down in Jefferson Davis Parish. And then there's the magician who defended his anti-drug school assemblies with the helpful explanation, "We have a live duck in the show."

The act really is an act. The departments of Justice and Education both released reports last year offering that conclusion, calling it "a relatively narrow range of intervention strategies, many of which have been shown either to not work ... or to have only small effects." The Congressional Budget Office suggested - unsuccessfully, of course - that maybe it was time to stop funding all those live duck and clown acts. And actual students handed in their own verdict on the effectiveness of the anti-drug portion of the act by getting stoned out of their gourds. As the Times explains, the number of eighth graders trying marijuana has more than doubled since the early 1990s. (In similarly consternating news, sales of Canibus CDs more than doubled just last week.)

"Still," Frammolino reports, "US education officials insist the program is worthwhile and that schools are safe, with 90 percent of the nation's campuses never reporting any act of serious violence." Ah, yes, the Sun-Coming-Up Program accepts your thanks for this morning's sunrise. The program is worthwhile, and schools are safe. We're pissing off the balcony, and forest fires are down 10 percent in the Pacific Northwest. Think of it as a kind of crossword puzzle or "Where's Waldo" game.

But there's more to our favorite crisis-programming convolutions than their brainteaser value; the best ones both demonstrate and inspire true courage. Remember Al Gore on Letterman - the show, that is - all those years back, smashing the ashtray with a hammer? Sure you do, particularly since you've received occasional reminders that the administration was busily reinventing the federal government, making it more effective, faster, and less expensive. Except that a reporter at The Washington Monthly just checked into that new, more efficient federal government by trying to get a series of government agencies to perform simple tasks. Seth Grossman's story, in the September issue, details such complicated interactions as calling a cancer-information hot line, maintained by the Department of Health and Human Services ... and trying to get some information about cancer. Insert big surprise here: It didn't work. Grossman was - in calls to a dozen agencies - disconnected, promised information by mail that never arrived, charged 1-900 fees of 35 cents a minute for passport information, and instructed to call hot-line numbers that were no longer in service. His stretching-deep-for-the-lesson conclusion: "In far too many of these agencies, help lines seem to exist just for the sake of existing, not really because the agencies really want to provide anyone with any help." But the reshaping of the federal administration has achieved one key goal: the reduction of the federal work force by 351,000. Symbols don't need to be staffed - they just need a sign on the door.

Writing in the 7 September issue of The New Republic, the less-than-dazzling Martin Peretz came up, surprisingly, with a bit of precise, perfect language - describing the critical political balance between "polemical outrage" and "functional indifference." He was writing about Clinton's policy toward Iraq, but he could just as easily have been writing about nearly any national politician - and just about any issue.

Still, Clinton is very much the all-time champion at this game. The Monday after the president was distracted by personal issues, he appeared before the oh-so-seriously-named Council on Foreign Relations - or, rather, before a hastily assembled audience that was arranged in front of a sign with the council's name on it. The president's staff had called the council on Wednesday of the previous week, explaining with some urgency that the president needed to give a major speech on economic policy right away. His cause: saving the world economy from a crash. Speaking somberly, wearing an expression of grim determination, the leader of the free world laid out his program for stopping a crisis that had already engulfed Russia and Asia and was emerging in Latin America. He had ordered the Secretary of the Treasury and the Chairman of the Federal Reserve to convene a meeting with their counterparts from other countries. And he didn't just want a meeting - he expected a report, too, "to recommend ways to adapt the international financial architecture to the 21st century." For substance, Clinton added a demand that Congress ship more money to the IMF, committing the United States to helping the collapsing economies pay their Visa bills with their MasterCards - or, we suppose, with American Express. Not much more advanced than casting shadows on the wall, but for a day the president was busy saving the world and didn't have time to dwell on less significant matters.

We, on the other hand, would greatly prefer to dwell on the less significant matters, which tend to be simpler and much funnier over drinks - and which cost a whole lot less money, $40 million in investigations aside. Feel free to agree or disagree, but the duck-owning magicians among you should take at least one additional piece of information into consideration. Clinton is recommending that Congress increase funding for the Safe and Drug-Free Schools and Communities Act in the next budget year - a position that really does take courage.

Or something a lot like it.

courtesy of Ambrose Beers

Appendix V-1, Customer Service Data Collection Forms

Appendix V-1, Customer Service Data Collection Forms

U.S. DEPARTMENT OF EDUCATION WEBSITE EVALUATION PROJECT

Interview/Focus Group Participant Information Sheet
Please answer the following questions:

1. Name____

Email Address ______________________________

2. Years working at the Department of Education __________(*years*)

3. What Department of Education office do you work in ? _______________

4. Job Title _______________________

5. Primary Responsibilities (*brief*)

____
____
____
____

6. In a general work day, I interact with the public answering questions (e.g. via phone or email) about information or services provided by the Department of Education for

☐ less than one hour
☐ 1-3 hours ☐ 6-8 hours
☐ 3-6 hours ☐ over 8 hours

7. In a general work day, I spend the following amount of time on the following activities (*please check one box for each activity*):

	less than 1 hour	1-3 hours	3-6 hours	6-8 hours	more than 8 hours
Planning internet based services	☐	☐	☐	☐	☐
Implementing internet based services	☐	☐	☐	☐	☐
Maintaining internet based services	☐	☐	☐	☐	☐

8. For how many years have you developed *internet based* services for the Department of Education? _______ (*years*)

9. For how many years have you worked providing *any kind* of information services for the public with the Department of Education? ______ (*years*)

10. Are there any other individuals you think we should talk to? Please include names and phone extensions if possible.

Thank you!

U.S. DEPARTMENT OF EDUCATION WEBSITE EVALUATION PROJECT

User perspective interview guide

USERS AND TASKS

1. Through discussions with several administrators at the Department of Education, we identified several groups as users of the Department of Education website. These were: educational administrators, teachers and professors, researchers and analysts, students, parents, librarians, writers and reporters, policy makers and legislators.

Does this categorization fit the customers you help? Are there other categories? Are there some categories of people that you don't help?

2. We are also interested in identifying the types of tasks or questions that people have asked. Have you tabulated or categorized or analyzed the kinds of questions people ask you? If yes, could you describe that categorization?

What are typical tasks that users engage in with the Department of Education website?

(If they have tabulated question types, etc. try to get copy of that information--the less time spent on this question, the better, as it is more important to get on to how the intermediaries help them)

INTERMEDIARY STRATEGIES

INDIVIDUAL QUESTION (if group, skip to question 4B)

3. Think back to the last question from a customer that you handled (through any point of contact--web, phone, etc.). Describe it. How did you go about answering it? (It doesn't matter how the person contacted the agency but make sure that you record that info)

If necessary, probe for additional detail on sources used, strategies used, things that the customer didn't know but needed to, explanations provided by the intermediary, questions asked by the intermediary etc. of the customers.

Individual 4A. The purpose of asking you about a particular instance was to begin to get you thinking specifically about how you help customers. What types of resources, expertise, knowledge, understandings do you use as you work with customers? (Try to get agency-specific examples.) (Go to question 5.)

Group 4B. As part of this round of our investigations, we are gathering data on how you help customers. We will use this information to help us design on-line tools to help people access statistics when they don't interact with you or other intermediaries. Wh at types of resources, expertise, knowledge, understandings do you use as you work with customers? (Try to get agency-specific examples.) (Go to question 5.)

5. What kinds of questions do you ask users in order to help yourself understand what they want?

(Note Q. 5 will get at similar info to q. 4 but also will shed light on what the intermediary perceives as important dimensions of tasks/questions to understand)

U.S. DEPARTMENT OF EDUCATION WEBSITE EVALUATION PROJECT

Interview/Focus Group Participant Information Sheet page 2

CONCLUSION (questions to ask if time, though question 7, 8 should always be asked)

6. In the first stage of the project, we found that users often had expectations about the agency and the data that influenced how they asked their questions, how they perceived the agency etc. What kinds of expectations do users have about your agency and data?

7. What we have been trying to understand today are the ways in which you help users, the types of strategies you use to answer their questions, the resources employed, etc. We are looking for ways we can incorporate some of this expertise on websites, particularly the Department of Education website, so that the public who come to the agency via the web may take advantage of your knowledge, even though they may not interact with you "in real time." Is there anything else that we should know that would help us understand?

8. Are there any additional people in your agency that you think we might wish to contact? Get contact information.

9. Are there any other comments?

Appendix V-2, Task Based Evaluation Forms

Appendix V-2, Task Based Evaluation Forms

EDEVAL TASK BASED USER SURVEY

November 1998

Interviewer instructions for conducting task based analysis.

1. Set up web browser and load the homepage of the research site. Clear history to reset links.

2. See **A** under participant instructions below. Thank the participants for coming, restate the purpose of the study and provide confidentiality statement, and ask if there are any questions.

3. Read instructions aloud (see **B** below)

4. Pass out WebMAC questionnaire

5. Allow participants to begin browsing

6. Alert participants after the passage of every ten minutes

7. Stop the participants after 45 minutes.

8. After completion of test, spend a few minutes with the participants answering participant questions.

9. Ask the participants to complete the questionnaire (see **C** below).

10. Thank the participant for their time and begin the focus group session (see **D** below).

Participant Instructions.

Ask participants to excuse you for reading these instructions verbatim. While this may be a bit awkward, it will ensure that we do not mix up any of the instructions.

A. Introduction to website evaluation

Thank you for agreeing to participate in this study. The purpose of this study is to evaluate the Department of Education websites. Your participation is extremely helpful as it allows us to observe how an "interested" user interacts with the Department of Education website.

We are going to use a combination of techniques to collect data during this session. First, we will ask you to answer some questions using the website as an information source. Second, we have a questionnaire for you to complete. Finally, we will discuss your experiences all together in a group.

We want you to understand that we are evaluating *the website*, not you, or your use of the website. In this regard, it is not really possible for you to make a mistake or do something wrong. To the extent possible, we hope that you conduct your visit just as you normally would if you were exploring on your own at home or work.

Although we don't anticipate confidentiality being an issue, be assured that all notes and survey forms will only be accessed by the survey team and will be destroyed after the study is completed. Study findings may be retained but will not include personal identifiers.

Are you still willing to participate in this study?

Do you have any questions so far?

Now we would like you to fill out the demographic portion of the survey, then take some time to read the rest of the questionnaire so that you will understand the types of questions that we will be asking you to answer.

<pause>

Do you have any questions?

B. Task Based Evaluation

We have given you four tasks or questions to answer by using the Department of Education website. Answers to each question exist somewhere on the site. The purpose of the questions is to provide you some structure during your exploration of the site. Our interests center on your impressions of the site, not your success in answering the

BEST COPY AVAILABLE

questions. We encourage you to explore any parts of the site that you think would be helpful in answering the questions.

<instructions from scenario sheet) Use any features of the www.ed.gov website to answer the following questions. After you complete your searching, we will ask you to fill out a questionnaire and we will also ask you questions about your impressions of the website.

As you search, please make not of the titles (not the urls) of the pages you move through as you find your answers in the table provided for each question. As an example, we will start you on the Department of Education home page, so we have printed Department of Education homepage as your first step in Table 1. Also, please note the title (not the url) of the page where you found the answer(s) directly below the table. Feel free to ask for help if you cannot determine the title of a page.

Given that we have a limited amount of time however, we suggest that you only spend a maximum of 10 minutes working on each question. We have designed the questions to encourage you to explore different parts of the website. By working on all four questions, you will get the broadest possible view of the website and will be better able to formulate an opinion about overall usefulness of the site. Therefore, we will alert you after each ten minute period passes. You are not required to move on at this point however. If you complete all the questions prior to the 45 minutes allotted, please use any remaining time to further explore the site.

We do ask that you primarily spend your time navigating the site to locate information and gain an understanding of the site structure rather then spending a great amount of time reading or downloading a particular document. Of course, looking over identified text to verify that you are interested in it or not is certainly appropriate as we do ask some questions concerning the quality of the website's content. If you find something that you are personally interested in, please just bookmark the page and we can come back and retrieve it after the session is completed.

Let's start the session. We will cut you off at the end of 45 minutes in order to begin the focus group.

To summarize: During the session we will prompt you every ten minutes to encourage you to work on all four questions. Also, we may urge you to continue exploring the site if you become bogged down in a particular section. If you have extra time at the end, we encourage you to continue exploring the site. You will answer the questionnaire in your possession at the end of the 45 minute period.

Any final questions?

Proceed.

C. WebMAC questionnaire

Now that we have finished answering the questions and looking through the website, we would like you to fill out the following questionnaire regarding your experiences. The questionnaire has two pages. The questionnaire asks you to indicate to what degree you agree or disagree with a series of statements. Look carefully at the scale at the top of the questionnaire. A 3 indicates that you strongly agree. A 2 that you somewhat agree. A 1 that you somewhat disagree. Finally a 0 indicates that you strongly disagree. If you don't feel you can answer the questions, please mark NA for not applicable. If you don't understand a question, please ask one of us for help.

You may look at the website while you fill out the questionnaire. However, please finish the questionnaire within 10 minutes.

Are there any questions?

Please proceed.

E. Focus Group

The purpose of this focus group is to gather information from you regarding your experiences with the Department of Education website.

Please take a moment to write down the top four weaknesses of the site, based on your explorations.

<The researcher then wrote all of the weaknesses up on the chalkboard, noting repeats>

To what extent do you agree with these weaknesses?
What should be the top four?
What should the purpose of the Department of Education homepage be?
Do you wish to discuss anything else?

Thank you very much for participating. The Department of Education will use your input to help redesign several aspects of their site.

Study Participant Demographics

Name ____

Age [ ] under 20 [ ] 20-30 [ ] 30-40
[ ]40-50 [ ] 50-60 [ ] 60 and over

Professional Experience

Do you have a degree in education? Y N

If yes, what is the degree(s)? BS MS EdD

How many years experience do you have as an educator? ____

How many years experience do you have as educational administrator? ____

How many years experience do you have as a professional educational information specialist?

____

Internet Use Experience

Number of Years using the WWW _______

Estimated Number of Web Pages Designed ____________

How would you rate your skill in navigating the WWW?

Low				High
1	2	3	4	5

How would you rate your experience using Department of Education Web pages?

Low				High
1	2	3	4	5

How would you rate your experience evaluating the design of Websites?

Low				High
1	2	3	4	5

How would you rate your experience evaluating the content of Websites?

Low				High
1	2	3	4	5

BEST COPY AVAILABLE

Appendix V-3, Log Files for Task-Based Test

Appendix V-3, Log Files for Task-Based Test, Group 1

```
syru182-075.syr.edu[05/Nov/1998:19:48:07/Welcome/overview.html
□
syru182-075.syr.edu[05/Nov/1998:19:49:27/offices/OESE/SDFS/
□
syru182-075.syr.edu[05/Nov/1998:19:49:56/offices/OESE/SDFS/grants.html
□
syru182-075.syr.edu[05/Nov/1998:19:54:13/stats.html
syru182-075.syr.edu[05/Nov/1998:20:08:44/programs.html
syru182-075.syr.edu[05/Nov/1998:20:09:10/Welcome/overview.html
syru182-075.syr.edu[05/Nov/1998:20:11:08/legislation/ESEA/index.html
syru182-075.syr.edu[05/Nov/1998:20:15:54/offices/OERI/At-Risk/
syru182-075.syr.edu[05/Nov/1998:20:23:41/news.html
syru182-
075.syr.edu[05/Nov/1998:20:24:50/legislation/FedRegister/announcements/
1998-4/110398a.html
syru182-075.syr.edu[05/Nov/1998:20:25:45/EdRes/index.html
syru182-075.syr.edu[05/Nov/1998:20:49:01/Picks/picsbg.jpg
syru182-075.syr.edu[05/Nov/1998:20:49:00/Picks/index.html
syru182-075.syr.edu[05/Nov/1998:19:47:12/programs.html
syru182-075.syr.edu[05/Nov/1998:19:53:48/
syru182-075.syr.edu[05/Nov/1998:19:53:52/icons/doeseal.jpg
syru182-075.syr.edu[05/Nov/1998:20:14:00/inits.html
syru182-075.syr.edu[05/Nov/1998:20:16:52/funding.html
syru182-075.syr.edu[05/Nov/1998:20:17:45/offices/OBEMLA/funding.html
syru182-075.syr.edu[05/Nov/1998:20:44:15/topicsaz.html
syru182-075.syr.edu[05/Nov/1998:20:44:41/dirs.html
syru182-076.syr.edu[05/Nov/1998:18:21:45/icons/doeseal.jpg
syru182-076.syr.edu[05/Nov/1998:18:21:42/
syru182-076.syr.edu[05/Nov/1998:19:47:04/programs.html
syru182-076.syr.edu[05/Nov/1998:19:50:40/pubs/EDInitiatives/98/98-10-
29.html
syru182-076.syr.edu[05/Nov/1998:19:52:14/PressReleases/10-
1998/safety.html
syru182-076.syr.edu[05/Nov/1998:19:55:29/funding.html
syru182-076.syr.edu[05/Nov/1998:19:57:13/search.html
syru182-
076.syr.edu[05/Nov/1998:19:57:44/offices/OSERS/IDEA/whatsnew.html
syru182-
076.syr.edu[05/Nov/1998:19:58:40/offices/OSERS/IDEA/geninfo.html
syru182-
076.syr.edu[05/Nov/1998:19:58:58/offices/OSERS/IDEA/overview.html
syru182-
076.syr.edu[05/Nov/1998:19:59:44/offices/OSERS/IDEA/updates.html
syru182-
076.syr.edu[05/Nov/1998:20:00:58/legislation/FedRegister/finrule/1996-
2/050996b.html
syru182-
076.syr.edu[05/Nov/1998:20:01:31/legislation/FedRegister/finrule/
syru182-
076.syr.edu[05/Nov/1998:20:01:28/legislation/FedRegister/finrule
```

BEST COPY AVAILABLE

Appendix V-3, Log Files for Task-Based Test

```
syru182-
076.syr.edu[05/Nov/1998:20:02:26/legislation/FedRegister/finrule/1998-
4/100198a.html
syru182-076.syr.edu[05/Nov/1998:20:06:39/legislation/ESEA/sec7144.html
syru182-076.syr.edu[05/Nov/1998:20:07:18/legislation/ESEA
syru182-076.syr.edu[05/Nov/1998:20:13:21/Welcome/overview.html
syru182-076.syr.edu[05/Nov/1998:20:14:33/legislation/ESEA/index.html
syru182-076.syr.edu[05/Nov/1998:20:24:12/offices/OBEMLA/funding.html
syru182-076.syr.edu[05/Nov/1998:20:24:39/offices/OBEMLA/prop227.pdf
syru182-076.syr.edu[05/Nov/1998:20:25:36/offices/OBEMLA/comgrant.html
syru182-076.syr.edu[05/Nov/1998:20:43:59/offices/OBEMLA/aboutus.html
syru182-076.syr.edu[05/Nov/1998:20:49:43/y2k/
syru182-076.syr.edu[05/Nov/1998:19:48:39/offices/OESE/SDFS/
syru182-076.syr.edu[05/Nov/1998:19:48:52/offices/OESE/SDFS/grants.html
syru182-076.syr.edu[05/Nov/1998:20:07:19/legislation/ESEA/
syru182-076.syr.edu[05/Nov/1998:20:08:05/legislation/
syru182-076.syr.edu[05/Nov/1998:20:12:21/stats.html
syru182-076.syr.edu[05/Nov/1998:20:44:04/offices/OBEMLA/pompasml.jpg
syru182-076.syr.edu[05/Nov/1998:20:49:47/offices/OCIO/year/
syru182-
076.syr.edu[05/Nov/1998:21:00:14/databases/ERIC_Digests/ed403101.html
syru182-080.syr.edu[05/Nov/1998:18:19:57/
syru182-080.syr.edu[05/Nov/1998:18:19:01/icons/doeseal.jpg
syru182-080.syr.edu[05/Nov/1998:19:47:32/pubs/EDInitiatives/98/98-10-
29.html
syru182-080.syr.edu[05/Nov/1998:19:50:30/PressReleases/10-
1998/safety.html
syru182-080.syr.edu[05/Nov/1998:19:50:58/offices/OESE/SDFS/news.html
syru182-080.syr.edu[05/Nov/1998:19:53:58/pubs/EDInitiatives/98/98-10-
09.html
syru182-080.syr.edu[05/Nov/1998:19:55:02/inits/construction/
syru182-080.syr.edu[05/Nov/1998:19:56:12/DirectLoan/
syru182-080.syr.edu[05/Nov/1998:19:56:21/prog_info/SFA/StudentGuide/
syru182-080.syr.edu[05/Nov/1998:20:01:58/funding.html
syru182-080.syr.edu[05/Nov/1998:20:07:18/search.html
syru182-
080.syr.edu[05/Nov/1998:20:09:16/offices/OSERS/IDEA/geninfo.html
syru182-
080.syr.edu[05/Nov/1998:20:09:57/offices/OSERS/IDEA/q_and_a.html
syru182-080.syr.edu[05/Nov/1998:20:11:13/offices/OSERS/IDEA/index.html
syru182-080.syr.edu[05/Nov/1998:20:11:49/programs.html
syru182-080.syr.edu[05/Nov/1998:20:12:16/Welcome/overview.html
syru182-080.syr.edu[05/Nov/1998:20:13:21/offices/OESE/SDFS/
syru182-
080.syr.edu[05/Nov/1998:20:13:57/offices/OESE/SDFS/aboutsdf.html
syru182-080.syr.edu[05/Nov/1998:20:14:07/legislation/ESEA/sec4011.html
syru182-080.syr.edu[05/Nov/1998:20:15:45/offices/OESE/SDFS/grants.html
syru182-080.syr.edu[05/Nov/1998:20:21:53/databases/gils/
syru182-080.syr.edu[05/Nov/1998:20:24:56/topicsaz.html
syru182-
080.syr.edu[05/Nov/1998:19:49:18/offices/OESE/SDFS/initiati.html
```

BEST COPY AVAILABLE

Appendix V-3, Log Files for Task-Based Test

```
syrul82-080.syr.edu[05/Nov/1998:19:56:13/DirectLoan/images/bg1.jpg
syrul82-
080.syr.edu[05/Nov/1998:20:08:05/MailingLists/EDInfo/msg00006.html
syrul82-
080.syr.edu[05/Nov/1998:20:08:36/offices/OSERS/IDEA/whatsnew.html
syrul82-
080.syr.edu[05/Nov/1998:20:10:31/offices/OSERS/IDEA/updates.html
syrul82-
080.syr.edu[05/Nov/1998:20:10:43/offices/OSERS/IDEA/frnotice.html
syrul82-080.syr.edu[05/Nov/1998:20:16:09/EdRes/index.html
syrul82-080.syr.edu[05/Nov/1998:20:16:39/about.html
syrul82-082.syr.edu[05/Nov/1998:18:19:27/icons/doeseal.jpg
syrul82-082.syr.edu[05/Nov/1998:19:06:50/
syrul82-082.syr.edu[05/Nov/1998:19:46:46/funding.html
syrul82-082.syr.edu[05/Nov/1998:19:47:48/offices/OESE/SDFS/grants.html
syrul82-
082.syr.edu[05/Nov/1998:19:53:24/offices/OESE/SDFS/98abstra.html
syrul82-082.syr.edu[05/Nov/1998:19:54:09/offices/OESE/SDFS/grants.html
syrul82-
082.syr.edu[05/Nov/1998:19:54:49/offices/OESE/SDFS/aboutsdf.html
syrul82-082.syr.edu[05/Nov/1998:19:57:42/
syrul82-082.syr.edu[05/Nov/1998:19:58:21/stats.html
syrul82-082.syr.edu[05/Nov/1998:20:10:55/
syrul82-082.syr.edu[05/Nov/1998:20:12:14/programs.html
syrul82-082.syr.edu[05/Nov/1998:20:12:54/Welcome/overview.html
syrul82-082.syr.edu[05/Nov/1998:20:15:05/offices/OSERS/IDEA/
syrul82-
082.syr.edu[05/Nov/1998:20:16:09/offices/OSERS/IDEA/geninfo.html
syrul82-082.syr.edu[05/Nov/1998:20:17:30/
syrul82-082.syr.edu[05/Nov/1998:20:18:14/programs.html
syrul82-
082.syr.edu[05/Nov/1998:20:22:09/legislation/FedRegister/announcements/
1997-4/111497a.html
syrul82-082.syr.edu[05/Nov/1998:20:24:29/offices/OBEMLA/aboutus.html
syrul82-082.syr.edu[05/Nov/1998:20:27:28/
syrul82-082.syr.edu[05/Nov/1998:20:43:39/topicsaz.html
syrul82-082.syr.edu[05/Nov/1998:20:43:49/topicsaz/topicsip.html
syrul82-082.syr.edu[05/Nov/1998:20:43:49/topicsaz/blue.jpg
syrul82-082.syr.edu[05/Nov/1998:20:44:14/topicsaz/index.html
syrul82-082.syr.edu[05/Nov/1998:20:46:23/topicsaz/index.html
syrul82-082.syr.edu[05/Nov/1998:18:19:25/
syrul82-
082.syr.edu[05/Nov/1998:19:51:27/offices/OESE/SDFS/98abstra.html
syrul82-082.syr.edu[05/Nov/1998:19:56:09/legislation/ESEA/sec4011.html
syrul82-
082.syr.edu[05/Nov/1998:20:17:00/offices/OSERS/IDEA/the_law.html
syrul82-082.syr.edu[05/Nov/1998:20:19:38/pubs/Biennial/202.html
syrul82-082.syr.edu[05/Nov/1998:20:24:29/offices/OBEMLA/pompasml.jpg
syrul82-082.syr.edu[05/Nov/1998:20:43:50/topicsaz/seal95.jpg
syrul82-082.syr.edu[05/Nov/1998:20:44:30/topicsaz/topicsip.html
syrul82-084.syr.edu[05/Nov/1998:18:20:02/
syrul82-084.syr.edu[05/Nov/1998:18:20:04/icons/doeseal.jpg
syrul82-084.syr.edu[05/Nov/1998:19:46:38/funding.html
```

BEST COPY AVAILABLE

Appendix V-3, Log Files for Task-Based Test

```
syru182-084.syr.edu[05/Nov/1998:19:46:38/funding.html
syru182-084.syr.edu[05/Nov/1998:19:46:41/funding.html
syru182-084.syr.edu[05/Nov/1998:19:48:01/offices/OESE/SDFS/grants.html
syru182-084.syr.edu[05/Nov/1998:19:50:07/offices/OESE/SDFS/index.html
syru182-
084.syr.edu[05/Nov/1998:19:50:25/offices/OESE/SDFS/aboutsdf.html
syru182-084.syr.edu[05/Nov/1998:20:00:34/stats.html
syru182-084.syr.edu[05/Nov/1998:20:00:39/stats.html
syru182-084.syr.edu[05/Nov/1998:20:00:49/stats.html
syru182-084.syr.edu[05/Nov/1998:20:00:50/stats.html
syru182-084.syr.edu[05/Nov/1998:20:02:30/stats.html
syru182-086.syr.edu[05/Nov/1998:18:20:41/
syru182-086.syr.edu[05/Nov/1998:18:20:43/icons/doeseal.jpg
syru182-086.syr.edu[05/Nov/1998:20:02:32/stats.html
syru182-086.syr.edu[05/Nov/1998:20:03:11/EdRes/index.html
syru182-086.syr.edu[05/Nov/1998:20:03:37/Beds
syru182-086.syr.edu[05/Nov/1998:20:14:31/
syru182-086.syr.edu[05/Nov/1998:20:15:25/idea
syru182-086.syr.edu[05/Nov/1998:20:15:47/programs.html
syru182-086.syr.edu[05/Nov/1998:20:24:57/
syru182-086.syr.edu[05/Nov/1998:20:43:30/topicsaz.html
syru182-086.syr.edu[05/Nov/1998:20:44:32/topicsaz.html
syru182-
086.syr.edu[05/Nov/1998:20:45:52/offices/OERI/BlueRibbonSchools/updates
.html
syru182-
086.syr.edu[05/Nov/1998:20:45:52/offices/OERI/BlueRibbonSchools/banners
/bnpr_upd.jpg
syru182-
086.syr.edu[05/Nov/1998:20:48:02/offices/OERI/BlueRibbonSchools/Scoring
98-99.html
syru182-
086.syr.edu[05/Nov/1998:20:49:50/offices/OERI/BlueRibbonSchools/banners
/bnpr_info.jpg
syru182-
086.syr.edu[05/Nov/1998:20:49:50/offices/OERI/BlueRibbonSchools/about.h
tml
syru182-
086.syr.edu[05/Nov/1998:20:52:18/offices/OERI/BlueRibbonSchools/updates
.html
syru182-
086.syr.edu[05/Nov/1998:20:52:31/offices/OERI/BlueRibbonSchools/Scoring
98-99.html
syru182-
086.syr.edu[05/Nov/1998:20:57:49/offices/OERI/BlueRibbonSchools/mainpg.
html
syru182-
086.syr.edu[05/Nov/1998:20:57:57/offices/OERI/BlueRibbonSchools/time.ht
ml
syru182-
086.syr.edu[05/Nov/1998:20:59:12/offices/OERI/BlueRibbonSchools/prep.ht
ml
```

BEST COPY AVAILABLE

Appendix V-3. Log Filés for Task-Based Test

```
syru182-
086.syr.edu[05/Nov/1998:20:59:22/offices/OERI/BlueRibbonSchools/time.ht
ml
syru182-086.syr.edu[05/Nov/1998:20:11:50/programs.html
syru182-086.syr.edu[05/Nov/1998:20:25:27/databases/ERIC_Digests/index/
```

BEST COPY AVAILABLE

Appendix V-3 Log Files, Group 2

```
syru182-075.syr.edu[10/Nov/1998:14:33:21/
syru182-075.syr.edu[10/Nov/1998:14:47:59/funding.html
syru182-075.syr.edu[10/Nov/1998:14:48:47/offices/OESE/SDFS/grants.html
syru182-
075.syr.edu[10/Nov/1998:14:49:59/offices/OESE/SDFS/98abstra.html
syru182-075.syr.edu[10/Nov/1998:14:53:13/offices/OESE/SDFS/
syru182-075.syr.edu[10/Nov/1998:14:55:13/stats.html
syru182-075.syr.edu[10/Nov/1998:15:01:03/PressReleases/05-
1998/gfsint.html
syru182-075.syr.edu[10/Nov/1998:15:02:23/offices/OSERS/RSA/rsakits.html
syru182-075.syr.edu[10/Nov/1998:15:04:43/pubs/AchGoal5/osers.html
syru182-
075.syr.edu[10/Nov/1998:15:06:06/offices/OSERS/IDEA/whatsnew.html
syru182-075.syr.edu[10/Nov/1998:15:06:30/offices/OSERS/IDEA/
syru182-
075.syr.edu[10/Nov/1998:15:07:08/offices/OSERS/IDEA/frnotice.html
syru182-
075.syr.edu[10/Nov/1998:15:07:19/offices/OSERS/IDEA/geninfo.html
syru182-
075.syr.edu[10/Nov/1998:15:07:39/offices/OSERS/IDEA/geninfo.html
syru182-
075.syr.edu[10/Nov/1998:15:07:48/offices/OSERS/IDEA/overview.html
syru182-075.syr.edu[10/Nov/1998:15:09:39/programs.html
syru182-075.syr.edu[10/Nov/1998:15:16:18/offices/OBEMLA/aboutus.html
syru182-
075.syr.edu[10/Nov/1998:15:19:24/legislation/GOALS2000/TheAct/sec1012.h
tml
syru182-
075.syr.edu[10/Nov/1998:15:20:50/legislation/FedRegister/announcements/
1998-2/060398a.html
syru182-075.syr.edu[10/Nov/1998:15:21:05/offices/OSERS/RSA/
syru182-075.syr.edu[10/Nov/1998:15:21:06/offices/OSERS/RSA/
syru182-075.syr.edu[10/Nov/1998:15:24:55/about.html
syru182-075.syr.edu[10/Nov/1998:15:25:21/people.html
syru182-075.syr.edu[10/Nov/1998:15:25:44/offices/OSERS/
syru182-075.syr.edu[10/Nov/1998:15:27:18/Awards/
syru182-075.syr.edu[10/Nov/1998:15:27:43/pubs/EDInitiatives/98/98-10-
29.html
syru182-075.syr.edu[10/Nov/1998:15:32:34/faqs.html
syru182-075.syr.edu[10/Nov/1998:15:52:19/topicsaz.html
syru182-076.syr.edu[10/Nov/1998:14:32:21/
syru182-080.syr.edu[10/Nov/1998:14:48:04/
syru182-080.syr.edu[10/Nov/1998:14:48:48/programs.html
syru182-080.syr.edu[10/Nov/1998:14:54:57/offices/OESE/SDFS/
syru182-080.syr.edu[10/Nov/1998:14:56:46/stats.html
syru182-080.syr.edu[10/Nov/1998:15:12:32/offices/OSERS/
syru182-080.syr.edu[10/Nov/1998:15:13:13/offices/OSERS/OSEP/index.html
syru182-
080.syr.edu[10/Nov/1998:15:13:57/offices/OSERS/OSEP/Programs/PFA_Home.h
tml
syru182-080.syr.edu[10/Nov/1998:15:15:14/faqs.html
syru182-080.syr.edu[10/Nov/1998:15:15:29/offices/OBEMLA/q_a.html
```

BEST COPY AVAILABLE

```
syru182-080.syr.edu[10/Nov/1998:15:16:00/offices/OBEMLA/q_a1.html
syru182-080.syr.edu[10/Nov/1998:15:17:39/Picks/index.html
syru182-080.syr.edu[10/Nov/1998:15:18:25/topicsaz.html
syru182-080.syr.edu[10/Nov/1998:15:18:59/topicsaz/index.html
syru182-080.syr.edu[10/Nov/1998:15:19:41/offices/OBEMLA/
syru182-080.syr.edu[10/Nov/1998:15:21:41/pubs/studies2.html
syru182-080.syr.edu[10/Nov/1998:15:22:12/pubs/studies.html
syru182-080.syr.edu[10/Nov/1998:15:29:21/funding.html
syru182-080.syr.edu[10/Nov/1998:15:29:49/pubs/EDInitiatives/98/98-10-
29.html
syru182-080.syr.edu[10/Nov/1998:15:30:17/news.html
syru182-080.syr.edu[10/Nov/1998:15:31:02/topicsaz/topicsip.html
syru182-080.syr.edu[10/Nov/1998:15:31:10/offices/OESE/SIP/magnet.html
syru182-080.syr.edu[10/Nov/1998:15:31:14/offices/OESE/magnet/sec-f.html
syru182-080.syr.edu[10/Nov/1998:15:32:22/offices/OESE/magnet/index.html
syru182-080.syr.edu[10/Nov/1998:15:32:31/offices/OESE/magnet/sec-b.html
syru182-082.syr.edu[10/Nov/1998:14:47:58/
syru182-082.syr.edu[10/Nov/1998:14:48:41/programs.html
syru182-082.syr.edu[10/Nov/1998:14:49:46/offices/OESE/SDFS/
syru182-082.syr.edu[10/Nov/1998:14:50:11/offices/OESE/SDFS/grants.html
syru182-082.syr.edu[10/Nov/1998:14:51:10/offices/OESE/SDFS/grants-
archive/12-97.html
syru182-
082.syr.edu[10/Nov/1998:14:52:07/offices/OESE/SDFS/aboutsdf.html
syru182-082.syr.edu[10/Nov/1998:14:53:14/offices/OESE/SDFS/index.html
syru182-082.syr.edu[10/Nov/1998:14:54:26/offices/OESE/SDFS/grants.html
syru182-082.syr.edu[10/Nov/1998:14:54:53/offices/OESE/SDFS/news.html
syru182-
082.syr.edu[10/Nov/1998:14:55:30/offices/OESE/SDFS/research.html
syru182-082.syr.edu[10/Nov/1998:14:55:55/pubs/edpubs.html
syru182-
082.syr.edu[10/Nov/1998:14:56:22/offices/OESE/SDFS/programs.html
syru182-082.syr.edu[10/Nov/1998:14:56:34/offices/OESE/SDFS/links.html
syru182-082.syr.edu[10/Nov/1998:14:57:03/offices/OESE/SDFS/index.html
syru182-
082.syr.edu[10/Nov/1998:14:57:07/offices/OESE/SDFS/aboutsdf.html
syru182-082.syr.edu[10/Nov/1998:14:57:48/offices/OESE/
syru182-082.syr.edu[10/Nov/1998:14:58:53/
syru182-082.syr.edu[10/Nov/1998:15:05:03/
syru182-082.syr.edu[10/Nov/1998:15:07:05/
syru182-
082.syr.edu[10/Nov/1998:15:08:45/offices/OSERS/IDEA/speech_2.html
syru182-082.syr.edu[10/Nov/1998:15:09:01/offices/OSERS/IDEA/index.html
syru182-
082.syr.edu[10/Nov/1998:15:09:44/offices/OSERS/IDEA/geninfo.html
syru182-
082.syr.edu[10/Nov/1998:15:10:00/offices/OSERS/IDEA/q_and_a.html
syru182-
082.syr.edu[10/Nov/1998:15:11:13/offices/OSERS/IDEA/whatsnew.html
syru182-
082.syr.edu[10/Nov/1998:15:12:03/offices/OSERS/IDEA/frnotice.html
syru182-
082.syr.edu[10/Nov/1998:15:12:34/offices/OSERS/IDEA/the_law.html
```

BEST COPY AVAILABLE

Appendix V-3 Log Files, Group 2

```
syru182-
082.syr.edu[10/Nov/1998:15:14:09/offices/OSERS/OSEP/Programs/TAD_IDEA.h
tml
syru182-
082.syr.edu[10/Nov/1998:15:14:29/offices/OSERS/OSEP/Programs/PFA_Home.h
tml
syru182-082.syr.edu[10/Nov/1998:15:15:43/offices/OSERS/IDEA/index.html
syru182-082.syr.edu[10/Nov/1998:15:16:06/
syru182-082.syr.edu[10/Nov/1998:15:17:09/offices/OBEMLA/aboutus.html
syru182-082.syr.edu[10/Nov/1998:15:19:12/PressReleases/05-
1998/gfsint.html
syru182-
082.syr.edu[10/Nov/1998:15:20:27/offices/OESE/ACTGUID/gunfree.html
syru182-082.syr.edu[10/Nov/1998:15:20:57/
syru182-082.syr.edu[10/Nov/1998:15:21:04/programs.html
syru182-082.syr.edu[10/Nov/1998:15:21:24/offices/OESE/SDFS/
syru182-
082.syr.edu[10/Nov/1998:15:21:27/offices/OESE/SDFS/aboutsdf.html
syru182-082.syr.edu[10/Nov/1998:15:21:56/offices/OESE/SDFS/index.html
syru182-082.syr.edu[10/Nov/1998:15:22:15/offices/OESE/SDFS/links.html
syru182-082.syr.edu[10/Nov/1998:15:22:39/offices/OESE/SDFS/news.html
syru182-082.syr.edu[10/Nov/1998:15:22:42/offices/OESE/SDFS/message.html
syru182-082.syr.edu[10/Nov/1998:15:23:27/programs.html
syru182-082.syr.edu[10/Nov/1998:15:24:48/offices/OESE/SDFS/
syru182-082.syr.edu[10/Nov/1998:15:24:57/offices/OESE/
syru182-082.syr.edu[10/Nov/1998:15:25:25/offices/OESE/SDFS/grants.html
syru182-082.syr.edu[10/Nov/1998:15:25:43/offices/OESE/SDFS/index.html
syru182-082.syr.edu[10/Nov/1998:15:27:59/Speeches/09-1994/hispsum.html
syru182-082.syr.edu[10/Nov/1998:15:28:23/
syru182-082.syr.edu[10/Nov/1998:15:32:47/pubs/parents.html
syru182-082.syr.edu[10/Nov/1998:15:34:08/pubs/Museum/
syru182-082.syr.edu[10/Nov/1998:15:34:17/index.html
syru182-082.syr.edu[10/Nov/1998:15:34:23/programs.html
syru182-082.syr.edu[10/Nov/1998:15:34:40/offices/OESE/SDFS/
syru182-
082.syr.edu[10/Nov/1998:15:34:44/offices/OESE/SDFS/research.html
syru182-082.syr.edu[10/Nov/1998:15:35:36/
syru182-082.syr.edu[10/Nov/1998:15:44:05/
syru182-084.syr.edu[10/Nov/1998:14:47:54/
syru182-084.syr.edu[10/Nov/1998:14:50:02/offices/OESE/SDFS/
syru182-084.syr.edu[10/Nov/1998:14:50:14/offices/OESE/SDFS/grants.html
syru182-
084.syr.edu[10/Nov/1998:15:06:16/offices/OSERS/IDEA/whatsnew.html
syru182-084.syr.edu[10/Nov/1998:15:06:36/offices/OSERS/IDEA/index.html
syru182-
084.syr.edu[10/Nov/1998:15:07:08/offices/OSERS/IDEA/geninfo.html
syru182-
084.syr.edu[10/Nov/1998:15:07:33/offices/OSERS/IDEA/summary.html
syru182-
084.syr.edu[10/Nov/1998:15:07:50/offices/OSERS/IDEA/q_and_a.html
syru182-
084.syr.edu[10/Nov/1998:15:08:44/offices/OSERS/IDEA/overview.html
```

BEST COPY AVAILABLE

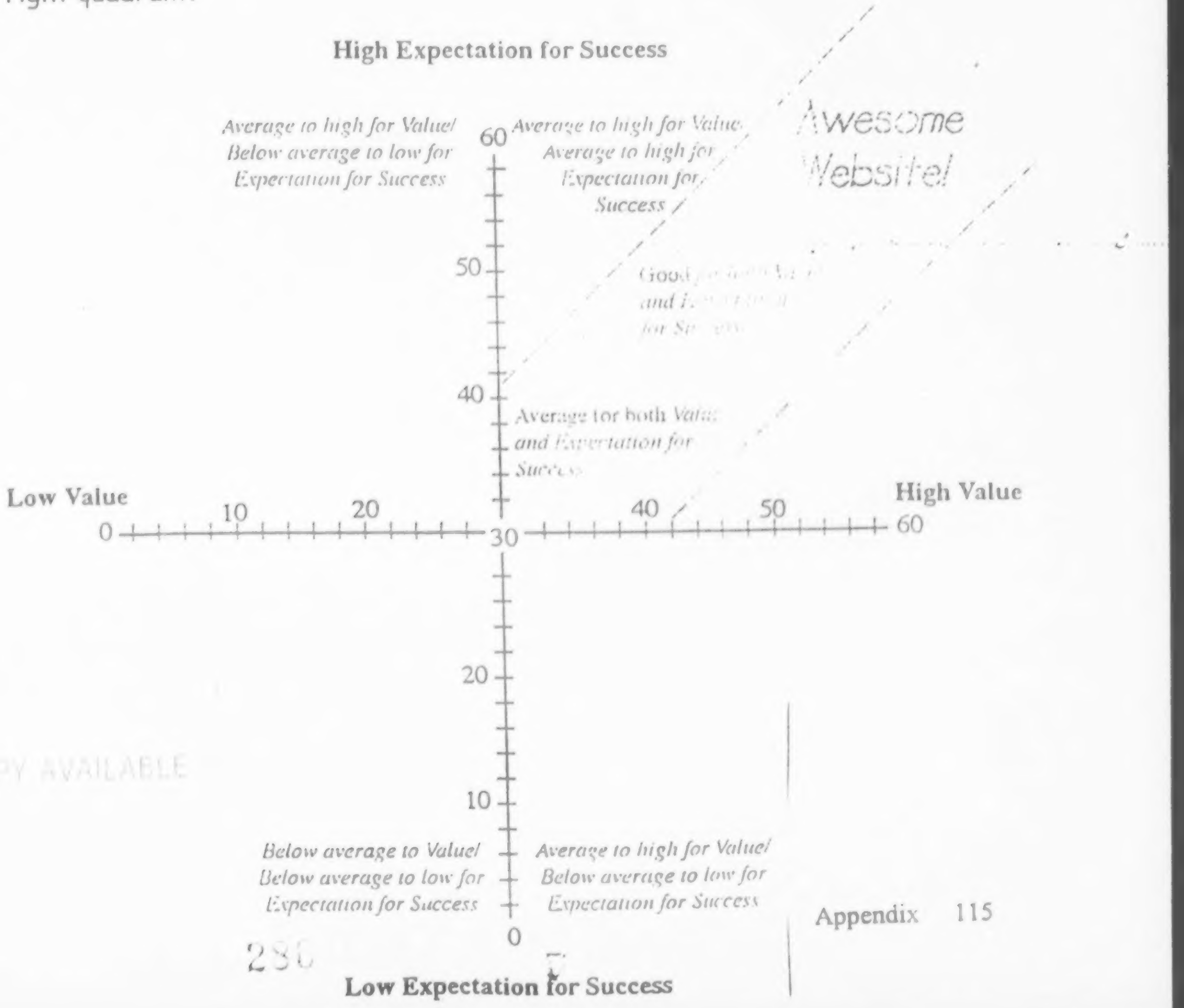
Appendix V-3 Log Files, Group 2

```
syru182-
084.syr.edu[10/Nov/1998:15:10:22/offices/OSERS/OSEP/Programs/TAD_IDEA.h
tml
syru182-084.syr.edu[10/Nov/1998:15:13:18/offices/OBEMLA/aboutus.html
syru182-084.syr.edu[10/Nov/1998:15:16:12/pubs/EDInitiatives/98/98-10-
29.html
syru182-084.syr.edu[10/Nov/1998:15:16:49/faqs.html
syru182-084.syr.edu[10/Nov/1998:15:17:44/Picks/index.html
syru182-084.syr.edu[10/Nov/1998:15:21:08/EdRes/index.html
syru182-084.syr.edu[10/Nov/1998:15:21:33/EdRes/EdFed/Star.html
syru182-084.syr.edu[10/Nov/1998:15:22:37/prog_info/StarSchools/
syru182-
084.syr.edu[10/Nov/1998:15:22:46/prog_info/StarSchools/whatis.html
syru182-084.syr.edu[10/Nov/1998:15:26:25/programs.html
syru182-084.syr.edu[10/Nov/1998:15:27:04/Welcome/overview.html
syru182-084.syr.edu[10/Nov/1998:15:30:20/funding.html
syru182-084.syr.edu[10/Nov/1998:15:30:39/pubs/KnowAbtGrants/
syru182-084.syr.edu[10/Nov/1998:15:31:31/pubs/index.html
syru182-086.syr.edu[10/Nov/1998:14:34:10/
syru182-086.syr.edu[10/Nov/1998:15:16:25/pubs/EDInitiatives/98/98-10-
29.html
```

Appendix V-4, WebMac Scoring Chart

Plotting Template

Plot the score for **V** along the Value continuum; plot the score for **XS** along the Expectation for Success continuum. Then, draw straight lines to their point of intersection. Good websites will have both scores that fall in the upper right quadrant. An **awesome** website will have scores that fall in the extreme upper right quadrant.



BEST COPY AVAILABLE

Appendix V-5, Buttons Method Forms

EDEVAL BUTTONS EVALUATION

November 1998

Interviewer instructions for conducting buttons analysis.

1. Prepare page packets

2. See **A** under participant instructions below . Thank the participants for coming, restate the purpose of the study and provide confidentiality statement, and ask if there are any questions.

3. Pass out demographics questionnaire

4. Read instructions aloud (see **B** below)

5. Pass out page packets and packet evaluation handout

6. Stop the participants after 1 hour has passed.

7. Ask participants if they have any questions.

8. Begin the focus group session (see **D** below).

9. Collect all materials.

BEST COPY AVAILABLE

Participant Instructions.

Ask participants to excuse you for reading these instruction verbatim. While this may be a bit awkward, it will ensure that we do not mix up any of the instructions.

A. Introduction to website evaluation

Thank you for agreeing to participate in this study. The purpose of this study is to evaluate the Department of Education websites. Your participation is extremely helpful as it allows us to observe how an "interested" user interacts with the Department of Education website.

We will be using a variety of data collection techniques in this session. First we will ask you to fill out a demographics questionnaire. Next we will ask you to examine and evaluate some printed out web pages. Finally, we will have a group discussion regarding the web pages you have evaluated.

We want you to understand that we are evaluating *the website*, not you, or your use of the website. In this regard, it is not really possible for you to make a mistake or do something wrong. To the extent possible, we hope that you conduct your visit just as you normally would if you were exploring on your own at home or work.

Although we don't anticipate confidentiality being an issue, be assured that all notes and survey forms will only be accessed by the survey team and will be destroyed after the study is completed. Study findings may be retained but will not include personal identifiers.

Are you still willing to participate in this study?

Do you have any questions so far?

Now we would like you to fill out the demographic portion of the survey.

<hand out demographic sheet>

Do you have any questions?

B. Buttons Evaluation

This data collection activity will consist of three parts: first, writing a brief written description of and reaction to webpage handouts; second, hand editing printed out copies of the webpages, and finally a short group discussion.

<hand out buttons evaluation worksheet: hand out eight page packets>

Please locate each of the eight packets of paper. Each packet represents the contents of a webpage on the Department of Education website, stripped of all its identifying and indexing information. We would like you to thoroughly read the content of each of these pages.

After reading the printout of each page, we would then like you to type a short paragraph on the computer which includes the following:

1. A brief description of the page's contents as you understand them
2. A brief reaction to the page. This reaction can include all of the following: your ability to understand the contents of the page, your emotional reaction to content on the page, questions you may have regarding the content of the page. Your reaction should also include anything else which the page makes you think of - positive or negative. I would like to read you a few sample reactions:

> "This is pretty clearly a 'scope and purpose' of the website type of page. This page should be near the top. Some of these links should probably even be on the main page of the site. The 'guide to..' links especially. Many of these links do not belong together on one page. The dogs report belongs with other links to dogs. There should be an entire set of pages concerning cats"
>
> "This page is a mess. I don't have the slightest idea what the logic was in putting this page together. The few links are all dogs of one type or another, but then it gets into cats, birds and small rodents. All of these areas need their own page and to be expanded"

Please take the time to type your description and reaction to each page immediately after you have finished reading it.

After you have written your response to the page, we would like you to edit the page with a pen. We would like you to:

1. Circle those parts of the page you have a difficult time understanding.
2. Cross out any content which you think is inappropriate for the page.

I have included an example of an edited page on your handout. <point out example of marked web page>

Please edit each page as soon as you finish writing your reaction to it.

After you have finished examining, summarizing/reacting to and editing all the page packets, we will hold a brief discussion to share our experiences with these Department of Education webpages.

To summarize. We will give you a packet of web page contents with all identifying and indexing material removed. Please read the first page, write the summarization/reaction to it and then edit it. After you have finished the first page, move on to the second. Please read, react to and edit the second. After you have finished the second, move on to the third - and so on, until you have finished all the packets. After everyone has completed their packets, we will hold a brief group discussion.

C. Focus Group

The purpose of this focus group is to gather information from you regarding your experiences with the Department of Education website.

Which pages did you find the most problematic?
What within the pages made them problematic?
How could the Department improve these pages?

Thank you very much for participating. The Department of Education will use your input to help redesign several aspects of their site.

Appendix V-6, Full Text of Buttons Reactions

Participants reactions vary partially due to the order in which they viewed the pages. The researchers rotated the order in which participants evaluated each of the pages in order to ensure that each page received equivalent evaluatory effort. Thus, some participants reviewed each page at the beginning of the session, and some reviewed each page at the end of the session. Participant fatigue probably impacted some later page reactions. The researchers have not separated out or marked these later reactions.

ED Offices and Budget

1. Seems pretty straight forward. Its a good place to start. I don't understand the title Ed Web Awards.

2. Description: The "About US" section. Important information is missing (e.g. Vision, standards, who we are, how to contact us, etc). I do not see relationship between "Company Info" and budget?
Reaction: I did not like it. 10 links stated without description. Those bullets are ugly.

3. page content: a basic directory of the U.S department of education
reactions: clear and nothing very new , not much to react to. - would not change anything

4. Brief Description: This is an introduction page to the DOE.
Brief Reaction: Nice. Why do we have ED Web Awards in there?

5. Overall, the information provided is giving me a clear understanding as to where I am. It is primarily the order in which it appears on the page that is weak. It also appears that information pertinent to this theme is missing, as well as, some of the information provided is not relevant to what appears to be the theme. Not too bad, but does need work or further development. Provide descriptives for the links.

6.
1. administrative information about department of education, it looks line (the left side) introduction of U.S. department of ED.
2. If the amount of national education goals is too large, and it is very important, what about just saying in this page instead of making hyperlink? In the sixth line, the icon refers to, maybe, acrobat, but do you think how many people know about this? They might just try to click this icon. No good for their search.
ED web Award is typed the biggest letter. It means it is most important in this page?

7. Page starts out with a link to the Department's Mission and National Education Goals. This is good. Maybe they should be described right on this page rather than having to go to another page to read them. No descriptors hampers efficiency because users may end up going to links that are not appropriate to their needs. This page looks like a table of contents to the web site. Not sure why the last link is listed and not

something else. Rhyme or reason to why some links are listed and some are not is unclear.

Other Sites

1. This is another list of links and links to outside sources. Again, without clarifying information, it is hard to know why these are organized the way they are. The disclaimer in the middle box is annoying. A lot of uninterrupted text is boring as well.

2. Educational resource organization directory, that is, listings of nation-wide educational information sites
Front part is just listing! Isn't it necessary to classify these resources? For example, a. financial funding source .b. educational technology-related information…

3. I was initially drawn to the box in the middle of the page and after reading it wondered why it was there. Not necessarily questioning the statement, but questioning the placement of the statement. Again, the page appears to have some continuity, but then goes off in some other direction. The "state" agencies links should all be on a separate page and the last six links seem to be just thrown on there. Where is the theme?

4. Brief Description: Various centers, agencies, web sites, projects, sites…………
Brief Reaction: How are these affiliated to DOE? What is the function of each? Is there any common theme? What is this BIG disclaimer that eats up half of the page and separates information? TOO MUCH INFORMATION. I wouldn't even know where to look if I needed specific information. These have to be annotated by mission, focus, purpose, or some theme.

5. page content: I am a bit confused from it, I think it is about special ed and rehabilitation. I am not sure what the page would be called. It seems like there is a mix of information provided. On page 2 of page B for example, It seems like it is about Rehabilitation and special ed., but that is a field I am doing my ms.
Reactions: A bit confusing, needs more headings; does not look like a parent site ; I liked the box. To much on one page with not enough order would like all the libraries information in one place ang a briefing of the information in the categories; all the family and parent information in one area ext..

6. Description: Confusing information. I do not know if this is a "search" page or "links" page. Not even a small piece of text introducing what is this all about.
Reaction: I did not like it. Why a section without narrative and then at the end some narrative. The organization it is not comprehensive and friendly.

7. This information does not seem to be organized in any particular order to make it easy to use or find. As a beginner in using the web it shows me information but I am not sure what to do with it. The box in the middle of the page is very confusing. I think so what. On page 2 what is a support institution? This just seems to be a mixture of information that rambles on.

Research and Statistics

1. Again there seems to be no logic to this page. I'm sure there is but its not mine. Where it says search eric where would I even begin. (900'000 + research articles)

2. Description: I guess that the page is a "links" page, where a bunch of websites somewhat related with the organization are posted here to give users an idea of what organizations are related to this.
Reaction: Each time I see a "links" page without annotations, or at least suggestions drives me crazy.

3. Page content: a list of all the research organizations relating to education.
reactions: very clear; well put together, would want to see such a page if I am looking for statistics when I am looking for information

4. Brief Description:
Statistics
Assessment
Clearinghouses
National and Regional Labs
Search Engines?
Evaluation Efforts

Brief Reaction: I am tired but also overwhelmed by so many institutions. I have no clue what service each provides from this page. I also don't know why they are all on the same page and how they are affiliated with DOE based on the info provided. I desperately need some overarching organizational structure that is annotated and succinct.

5. Clear theme, but no descriptions to the links. Some links are well placed and are comfortable to follow, but then it happens again where all of a sudden there are a group of links thrown at the bottom of the page. Discarded as they have no place in this site. Poor links!

6.
1. Information about educational statistics and measurement(like testing)

2. Well-organized and neat design. First level bullet and second level bullet make users know about the structure and relationship of each title. What's the major difference of Italic letter? Does it mean some sort of edition like book, or newsletter? If the "Digest of educational.." and "The condition of .." are under the statistical publishing, you should narrow the space between these two lines and change the third level bullet to another smaller one.

7. This page is like looking at a telephone directory. The yellow pages are much more interesting and at lease in alphabetical order. I imagine I would have to do a search to actually find one of these links if I couldn't find it on the page because there doesn't seem to be a rationale for why these are organized the way they are. Some items are categorized like statistical info and assessment info which is more helpful.

Programs and Services

1. This is a page of links with short summary descriptors. Descriptions are ok and may be useful in helping reader to access information. ,I prefer links with descriptors than without. Font size on all pages is small (looks like 10 point) and I would rather read 20 point font because I read quite a bit during my regular work day. Abbreviations are used after each title which is helpful in case abbrev. Are used without full name later.

2.
1. First page of department of education?
2. Simple!

3. Not bad! I like the short descriptions for the links. A few of these links seem out of place, not necessarily in the same theme. They should be grouped and seperated with a heading.

4.
1. Brief Description: This page appears to be an index page of some sorts. Has sub-headings that consist of directories, catalog, policy guidance, plans and annual reports, guide to education programs.
Brief Reaction: I think its ok now that I have figured out what is common to all these links. However, a brief overview of this page will guide the user to what this page is about. This page has too much information that need not be related. I see four categories a) directories, catalogs, and guides and b) rules and regulations, c) reports, and d) overviews to ED programs and services.

5. page content: gides and resource information for ed progrms
reactions: I liked the briefing under each heading. It saves the time form going into the sit, I don't think it would have been as useful other wise.

6. Description: An annotate list of options. Maybe a repository of documents and program descriptions and services altogether.
Reaction: I do not see a hierarchy, or organizational schema. Even though in this page the links are described in advance, and the layout is better, still confusing. Subtitles, bottoms, or colors might help.

7. Good idea to bold titles but but not in any logical order.

Student Financial Aid

1. I think there should be a list of definitions of different types of agencies and terminology. There is a need for an index so you can more easily find the general categories you want This could be very much like a book index.

2. Description: This page was a lot clear, without title or subtitles was very clear the purpose. To provide information and advising to people seeking students' financial support. Every links have a short description, nice.
Reaction: This page looks a lot better than the previous one. Did not impressed me neither depressed me.

3. Brief Description: This page is about various type of financial aid, loans, and ED projects that deal with the process.

Brief Reaction: I like this page but it is overwhelming. It has many resources on how the DOE provides you with these avenues to pursue financial aid. The part that I am not ok with is again the hierarchy in which sub-heading is presented. I see two main categories a) type of financial aid, b) tax credits and c) agencies or projects that provide directives and regulations for the process. Then from there they can lead one to the various sub-headings.

Now that I have re-organized this more I look at my category A and see that there are still too many areas. I would like to sythesize the info more so we could have 3 categories a) Financial Aid b) Grants, and C) Loans or something like that..

4.
1. Resource for financial support
Title of fund or scholarship should be highlighted. Under the fourth bullet, I almost miss the hyperlink "direct loan web site"

5. Information to links is in a listed format with short summary type descriptions. Nothing of interest pops out at this time. Might be more informative if it described what constituents would be interested in each link. Use of abbreviations without the official name is presuming the users know these in advance.

Funding Opportunities

Due to researcher error, this page did not receive the same amount of participant attention as other pages. In order to correct for this, the researcher had two web design experts assess the page using the same protocol as the regular participants. The expert assessors' comments follow:

1. This page appears to be a list of federal sources of educational funding, for both research and the implementation of programs. They should add descriptions for all the links (i.e. why one might want this information).

Lack of descriptions impedes understanding of web page. How are Federal Register documents, Ed General Administrative Regulations, ED Budget, Comprehensive School Reform Demonstration Program and Safe & Drug Free Schools Program links relevant?

2. This page is all about Ed Grants, Funding and Budget information. But, the Safe & Drug-Free Schools link at the bottom of page doesn't seem to fit with those areas.

President's and Secretary's Priorities

1. Lack of titles impedes understanding of web page. List and description of the Departments seven priorities would read better if they were in chronological order. I'm unsure why they are described out of order. The links under each paragraph appear appropriate, but it is not clear whether they are appropriate without seeing them. Not sure if the page is written so that all users can understand it. If the audience is parents, more clarification is needed.

2.
1. Educational regulation and policy guideline for priorities

Even though the summary of each goals is posted in the first part of this web page, I do not think it works because few people know it shows the contents beforehand. What is this for? Convenience to link?

3. I was understanding the gist of the page as I began to read it and then in the middle of the fist page was apparently the basis or lead in for the information on the page. As I continued to read through the page, I felt most links were appropriate for the "Call to Action" point that was being made. However, I am not sure I was comfortable with the order in which these points were being made (no apparent sequence). As for the design, links relative to the "points" were good in list form and when a few of them were placed

in a paragraph format, it was out of sync. Good idea, but needs to be reformatted for continuity.

4. Brief Description: The page provides users with information on how the DOE is sponsoring initiatives that address the presidents' Educational Goals. It provides simple links to the various organizations and projects involoved in carrying out these initiatives. Brief Reaction: Nicely done. They managed to put in a lot of information in an easy to synthesize maner that can be easily tied to the main purpose of the web page. Annotations of each link might be useful but not at the expensive of overwhelming the user. Also for every category, there are 7 + /- access points which is not taxing to the brain.

5. Description: I am not sure about he content. May be is related to the school reform or some king of organizational objectives based on President Clinton's "Call to Action". Not very well layout. Numbers or bullets might help to differentiate one objective from other. The fonts are used without concern about the size, normal paragraphs one size, links other size, and so on.

6. Secretary Riley message should have been put at the top of the page. I didn't know what I was reading or what the context was. The organization of this material is terrible! ! Different type fonts inappropriate placement of information.

News and Events

1. A hodge-podge of information. I am getting tired of reading it . I think I would look for information somewhere else. All of the material on all pages is in a formatt the is frustrating to look at and read. I am not sure I could find anything I wanted.

2. Description: Seems to me like an press section. News, reports, calendars, etc. Without categories, it is hard to say for sure what is this page all about.
Reaction: I am not sure, but are all these pages created without any kind of graphics. I mean to reinforce the written language with the graphics language. People are so used to read newspapers, magazines, books, with heavily graphic content.

3. Brief Description: Ok the first part is about community updates and that takes you to all sorts of information. All relevant I hope. Then there is a section in the center that does not seem to fit anywhere. All I understood from it was that it is about reports and announcements, letters, bulletins etc.. Then the third part is about the main page??? The links in there do not look like they merit making the MAIN page of the DOE!! But then I am not an expert in that area. I thought I was done only to discover there is yet another page… of stuff totally unrelated to the top of this page. I try to make sense of the content

but it is overwhelming...too much detailed information covering such a range of topics from grants to conference, project events, training, etc...etc..

Brief Reaction: Well, This whole page, aside from the Main ED WEB part seems to be an index of various publications and press releases. Ok good, but there is too much in there that may not be immediately relevant if you are just trying to get a quick update from various publications (see editing). I really do not care for this page at all. As I

read through most of these links take you, it seems, to lots more publications. For example ED press releases, town meetings, etc... why not just do a chronological update on these issues that matter and archive information by date. The second page is totally frustrating, overwhelming, and deals with a very different topic from publications and press releases.

4. My initial thought was that was no rhyme or reason to the links. Certain groups of links appeared to be relevant, while others just appeared to be thrown down. Main ED Web is sticking out like a sore thumb. Where does it belong, possibly not on this page. Everything is a link with no descriptives to both the links and the page. Why is there a statement as where more info is without a link to that info. Very chaotic!

5.
1. listings of programs and service.
2. It is like melting pots. NCES, OPE, SFA are under the white house education press release? If not, What is the relationship between first part bullet and second part bullet? Isn't it too spacious between Main ED web and five second bullets group? The last ten first bullets can be classified just "the others"? What is the main subject of those things?

6. Lists of links with no descriptors. No buttons to Homepage or a vehicle to e-mail questions and thoughts. Hard to tell if the links are appropriate without going to them. More abbreviations that may not be readily deciphered.

Publications and Products

1. No logical order.

2. Description: Better, simple, and nice. Resources are presented with a short description. The user can easily review all of them, they would think that because the description is short the content is easy (personal assumption).
Reaction: I did like it. The fonts are OK, the descriptions. The part at the end is just nice, is like "if you still want more see also this".

3. page contents: the page is an education resource directory. It contained informative information such as data bases, resource directories for and ordering systems for publications and gides to the U>S department of education.

reaction: I have a clear ability to understand the contents of the page. If I was to look up something about education for research reasons or the department of education, I would hope to find, the information I see on the page. It gives me a path to start out on.

4. Brief Description: This page is about various publications and databases, directories, research reports, and statistics including regulations and policies.
Brief Reaction: Haven't I just seen similar information on Page D? Too much to browse through. Again, I suggest further synthesis by categorizing this page into a) Directories, b) Databases, c) Reports or soemthing like that. The annotated information is useful. The later section (see also) is distracting and does not add any value to the web page. Either include it in one category or remove. More pages, less links, more short annotations.

5. This has been the most concise page thus far. There is a brief description for the majority of the links which gives me an opportunity to know if that link has relevance to my research. However, I would like to see these in a more heirarchial order or possible grouped in more closely related topics. There are a few links that I thought "why are they here?", otherwise this was clear and concise.

6. updated version of first page of U.S. department of ED(if I compared this to page D)? Too many listings. Wouldn't it be nice to lessen the number of titles to six to seven at most?

7. Another list of links. Doesn't appear to have a rhyme or reason for the list. Not sure how else it could be presented to improve it. Titles seem to be ok. Not sure why the see also is listed on the bottom of the page and why those links are there.

Appendix V-7: Buttons Evaluation Page Images

Presidents and Secretary's Priorities

1. All students will read independently and well by the end of 3rd grade.
2. All students will master challenging mathematics, including the foundations of algebra and geometry, by the end of 8th grade.
3. By 18 years of age, all students will be prepared for and able to afford college.
4. All states and schools will have challenging and clear standards of achievement and accountability for all children, and effective strategies for reaching those standards.
5. There will be a talented, dedicated and well-prepared teacher in every classroom.
6. Every classroom will be connected to the Internet by the year 2000 and all students will be technologically literate.
7. Every school will be strong, safe, drug-free and disciplined.

Secretary Riley and senior Department officials developed seven priorities (see Working Document and the Strategic Plan) for the Department, based on the "Call to Action" issued by the President in his State of the Union Address (February 4, 1997). These seven priorities are as follows...

All students will read independently and well by the end of 3rd grade.

America Reads Challenge
The Reading Summit
Class Size Reduction and Teacher Quality Initiative
America Goes Back to School: Get Involved!
Voluntary National Tests
Family Involvement
National Assessment of Educational Progress (NAEP) Reading Reports

All students will master challenging mathematics, including the foundations of algebra and geometry, by the end of 8th grade.

Visit our Math Initiative Page where you will find information such as speeches, fact sheets, publications, reports and the Third International Math and Science Study (TIMSS).

By 18 years of age, all students will be prepared for and able to afford college. (Point 8 in President Clinton's "Call to Action"

America's HOPE Scholarship
Direct Loan Program
Department of Education's Office of Postsecondary Education
Project EASI
Think College-- Learn for a Lifetime

All states and schools will have challenging and clear standards of achievement and accountability for all children, and effective strategies for reaching those standards (Point 1 in President Clinton's "Call to Action").

Voluntary National Tests
Goals 2000
School-to-Work
Improving America's Schools Act of 1994 -- Elementary and Secondary Education Act
Comprehensive School Reform Demonstration Program
National Assessment of Educational Progress (NAEP) State-by-State Results

There will be a talented, dedicated and well-prepared teacher in every classroom. (Point 2 in President Clinton's "Call to Action")

Visit our Teachers Web Page where you will find information on attracting and preparing teachers, guides for teachers, teacher leadership, research and studies, ERIC Digests, and other resources.

Every classroom will be connected to the Internet by the year 2000 and all students will be technologically literate. (Point10 in President Clinton's "Call to Action")

U.S. Department of Education Technology Initiatives
The Mid-continent Regional Educational Laboratory (McREL)
North Central Regional Educational Laboratory
Regional Technology in Education Consortia (R*TEC)

Every school will be strong, safe, drug-free and disciplined. . (Point 7 in President Clinton's "Call to Action")

School Construction and Design
Safe & Drug Free Schools Program
US Charter Schools

Flexibility and Waivers
Improving America's Schools Act of 1994 -- Elementary and Secondary Education Act

The Partnership for Family Involvement in Education supports the seven priorities through family and community involvement in children's learning. As members of the Partnership, thousands of family-school partners, employers, community organizations, and religious groups work together to help all children learn to high academic standards.

Funding Opportunities

- Grants and Contracts Information
- *Federal Register* documents
- FY 1999 Forecast of Funding Opportunities under ED Direct Grant Programs and Fellowship Programs (11/3/98) (also available in PDF format -- 1.09Mb) NEW
- *What Should I Know about ED Grants*
- ED General Administrative Regulations (EDGAR)
- *Guide to ED Programs*
- ED Budget
    - Bilingual Education and Minority Languages (OBEMLA) Funding Opportunities
    - Comprehensive School Reform Demonstration Program
    - Funding for Postsecondary Institutions
    - Migrant Education Grant Information
    - Rehabilitation Services Administration (RSA) Program Application Kits
    - Safe & Drug-Free Schools Program

BEST COPY AVAILABLE

- User-friendly publications (such as the popular *Student Guide to Financial Aid* and *Funding Your Education*) describing federal grant, loan, and work-study programs.
- Free Application for Federal Student Aid (FAFSA) -- electronic versions of the FAFSA that you can use to submit your completed application form to ED through the web, by modem, or by mail. *(If you have technical questions about the electronic FAFSA, please call 1-800-801-0576).*
- Title IV School Code Search, a convenient way to look up codes for the colleges that you are considering, so that you can enter them in Section H of the FAFSA.
- A special low interest rate, currently 7.46%, is available for a limited time to eligible borrowers who consolidate their outstanding student loans through the Direct Loan program, if their application is received no later than January 31, 1999. (This interest rate may also be available through some government-guaranteed lenders, although they are not required to offer the low rate.) For more information, call 1-800-557-7392 or check out the Direct Loan Web Site at http://www.ed.gov/DirectLoan.
- Hope Scholarship and Lifetime Learning Tax Credits which provides all the latest information on the new tax credits for college costs.
- The Guide to Defaulted Student Loans, designed to help borrowers resolve default situations for loans that have gone into default.
- Other higher education resources, including addresses and links to state guarantee agencies.
- OPE Policy Initiatives and Program Data and Information for Financial Aid Professionals which provide official policy and regulatory directives for postsecondary education institutions.
- Project EASI, a collaborative initiative led by ED and its partners in the higher education community. Project EASI focuses on ways to streamline the financial aid process for our customers.

BEST COPY AVAILABLE

- National Center for Education Statistics (NCES) including ...
  - Educational Statistics Finance Center
  - Frequently Asked Statistical Questions (uses frames)
  - Statistical Data and Surveys
  - Statistical Indicators
  - Statistical Publications including ...
    - *Digest of Education Statistics* (1997)
    - *The Condition of Education* (1998)
  - Third International Mathematics and Science Study (TIMSS)

- National Assessment of Educational Progress (NAEP)
  - National Results
  - State by State Results
  - Results over Time
  - Summary Data Tables
  - Special Interest Reports
- National Assessment Governing Board (NAGB)

- Educational Resources Information Center (ERIC)
- Eisenhower National Math/Science Clearinghouse and Regional Consortia
- Fund for the Improvement of Postsecondary Education (FIPSE)
- National Institute for Disabilities & Rehabilitation Research (NIDRR)
- National Library of Education (NLE)
- Office of Educational Research & Improvement (OERI)

BEST COPY AVAILABLE

- Regional Educational Laboratories
- National Research & Development Centers
- Field-initiated Studies
- National Educational Research Policy and Priorities Board
- National Center for Research in Vocational Education (NCRVE)

  - National Institute on Student Achievement, Curriculum, and Assessment
  - National Institute on the Education of At-Risk Students
  - National Institute on Early Childhood Development and Education
  - National Institute on Educational Governance, Finance, Policy-Making, and Management
  - National Institute on Postsecondary Education, Libraries and Lifelong Learning

- Collections of Research Syntheses
- Education Research and Practice -- Reports and Studies
- *OERI Bulletin* -- quarterly newsletter
- Program Evaluation
- Research Priorities Plan
- Search ERIC -- bibliographic database of 900,000+ research articles, reports, conference papers, instructional materials, and other materials (updated monthly)
- Search ERIC Digests -- 1,700+ short reports on current education topics (updated quarterly)

BEST COPY AVAILABLE

News & Events

- *Community Update*
- *EDInfo* Information Service/Listserv
- *ED Initiatives*
- ED Press Releases
- ED Publications Published within the Last 90 Days
- Satellite Town Meetings
- Speeches and Testimony
- Updates on Budget and Activities
- White House Education Press Releases and Statements

    - National Center for Education Statistics (NCES) -- Recently Released Reports and Data Products
    - Office of Postsecondary Education (OPE) -- News and Official Announcements from the Office of the Assistant Secretary
    - Student Financial Assistance (SFA) -- Dear Colleague Letters, Official Electronic Announcements, and Direct Loan Bulletins

- Main ED Web

BEST COPY AVAILABLE

    - National Center for Education Statistics (NCES)
    - National Library of Education
    - Office of Vocational and Adult Education (OVAE)
    - Safe and Drug-Free Schools News Update page
    - School-to-Work (STW)

- *Federal Register* documents
- FY 1999 Forecast of Funding Opportunities under ED Direct Grant Programs and Fellowship Programs (11/3/98) (also available in PDF format -- 1.09Mb) NEW
- Grants and Contracts Information

  More Info about Funding Opportunities in ED Offices

  - Rehabilitation Services Administration (RSA) Program Application Kits

- 1998 Regional Conferences on Improving America's Schools
- Calendar of Education-related Conferences (at ACCESS ERIC)
- Calendar of NIDRR Project Events (National Institute for Disabilities and Rehabilitation Research)
- Disability-Related Conference Database (National Information Center for Children and Youth with Disabilities -- NICHCY)
- National Clearinghouse on Bilingual Education (NCBE) Conference and Meetings Calendar -- 1998
- National Institute for Literacy Calendar of Events
- School-to-Work Calendar of Events
- SFAP Training Update Calendar for Financial Aid Professionals (Student Financial Assistance Programs)
- Satellite Town Meeting
- Vocational Education Calendar of Events (National Center for Research in Vocational Education)

BEST COPY AVAILABLE

Programs & Services

- Overview of ED Programs and Services -- This introduction to the Department's primary areas of responsibility highlights key programs and initiatives and provides numerous links to additional information.

- Guide to U.S. Department of Education Programs -- In order to carry out its mandate, the Department administers over 200 programs. The *Guide* provides a concise description of each program, identifies who may apply, and gives the name and telephone number of the Department office to contact for more information. The *Guide* is updated monthly.

- Education Resource Organizations Directory (EROD) -- The Directory is intended to help you identify and contact organizations that provide information and assistance on a broad range of education-related topics. The Directory includes information on more than 2,000 national, regional, and state organizations and is constantly being updated and expanded. In many cases you can link directly to the organization's home page.

- Catalog of Federal Domestic Assistance (CFDA) (at GSA) -- The CFDA is a comprehensive listing of all Federal government programs -- not just those from the Department -- that give out money or other forms of assistance. The CFDA is published every year in June by the General Services Administration (GSA), with an update published around December.

- Biennial Evaluation Report -- The FY 1995-96 *Biennial Evaluation Report* provides available information on the purpose, funding, target population, services, administration, effectiveness, management improvement strategies, and sources of information for 154 programs administered by the Department during FY 1995-1996. Also Available: Biennial Evaluation Report 1993-94.

BEST COPY AVAILABLE

- Legislation, Regulations, and Policy Guidance -- Our growing collection of legislation, regulations, and policy guidance pertaining to ED programs and activities includes links to full text documents on ED's web as well as useful resources elsewhere on the Internet.

- ED Strategic Plans and Annual Reports

Publications & Products

- ED Pubs On-Line Ordering System -- to identify and order current U.S. Department of Education publications and products.
- Database of ED Publications in ERIC -- a searchable bibliographic database of more than 20,000 publications produced or funded by ED since 1980.
- Newsletters and Journals from the Department -- periodical publications featuring news about Department initiatives and programs, upcoming events, new publications and services, and the latest research findings and model programs.
- Guides to the U.S. Department of Education -- general overviews of the Department and road maps to its programs and offices.
- Resource Directories -- catalogs and collections of information on a wide range of educational programs, events, and organizational sources of assistance.
- Collections of Research Syntheses -- concise, research-based synopses and literature reviews of major educational topics.
- Publications for Parents -- electronic versions of popular pamphlets and brochures designed to address parents' concerns about their children's education.
- Education Statistics -- an extensive list of statistical publications, survey data sets, and topical analyses produced by the National Center for Education Statistics (NCES) to report the condition and progress of education.
- Educational Research and Practice - Reports and Studies -- comprehensive, timely analyses of major educational topics such as systemic reform, the relationship between time and learning, and research-informed transformation of instruction.
- ED Strategic Plans and Annual Reports -- strategic plans, annual and semiannual reports, and other administrative reports and plans describing the activities of U.S. Department of Education offices and programs.
- Legislation, Regulations, and Policy Guidance — full text documents on ED's web as well as useful resources elsewhere on the Internet pertaining to ED programs and activities.

See also:

BEST COPY AVAILABLE

- **President's & Secretary's Priorities**
- **Program Evaluation Reports**
- **Civil Rights in Education Publications**
- **Bookshelf for Student Financial Aid Professionals**

ED Offices & Budget

  - Mission
  - National Education Goals

  - ED Organizational Structure and Offices [Text-only version]
  - Where ED Is Located--Headquarters and Regional Offices
  - Find a Person/Phone Directory
  - 1998 ED Organizational Directory

  - ED Budget
  - Overview of ED Programs and Activities
  - Guide to ED Programs

- ED Web Awards

BEST COPY AVAILABLE

Other Sites

- Search any or all ED-funded web sites
- Comprehensive Regional Assistance Centers
- Educational Resources Information Center (ERIC) and Other Clearinghouses
- Eisenhower National Clearinghouse and Regional Consortia
- National Research and Development Centers
- Regional Educational Laboratories
- Regional Technology in Education Consortia (R*TEC)
- Star Schools Program Sites
- Technology Innovation Challenge Grant Projects
- Other ED-Supported Sites

The categories below contain hypertext links or pointers to information created and maintained by other public and private organizations. These links and pointers are provided for the user's convenience. The U.S. Department of Education does not control or guarantee the accuracy, relevance, timeliness, or completeness of this outside information. Further, the inclusion of links or pointers to particular items in hypertext is not intended to reflect their importance, nor is it intended to endorse any views expressed, or products or services offered, on these outside sites, or the organizations sponsoring the sites.

- Other Federal Agency Educational Resources
- Federal Government Internet Library Resources
- General Guides to Government Internet Resources

- State Arts Agencies
- State Directors of Adult Education
- State Directors of Special Education

BEST COPY AVAILABLE

- State Directors of Vocational-Technical Education
- State Education Agencies
- State Guaranty Agencies
- State Higher Education Agencies
- State Literacy Resource Centers
- State Parent Training and Information Center (Disabilities)
- State Tech Prep Coordinators
- State Technology Web Sites and Contacts
- See the Education Resource Organizations Directory (EROD) for additional state and regional sources of information and assistance.

- Educational Institutions and Education Support Institutions -- including lists of Internet sites for colleges and universities, K-12 schools, school districts, and state departments of education.

- Libraries -- including lists of Internet-accessible library catalogs and services.

- Educational Associations and Organizations

- Curricular Resources and Networking Projects -- Internet-based networking projects and educational materials for teachers and students.

- General Catalogs and Subject Trees on Education

BEST COPY AVAILABLE

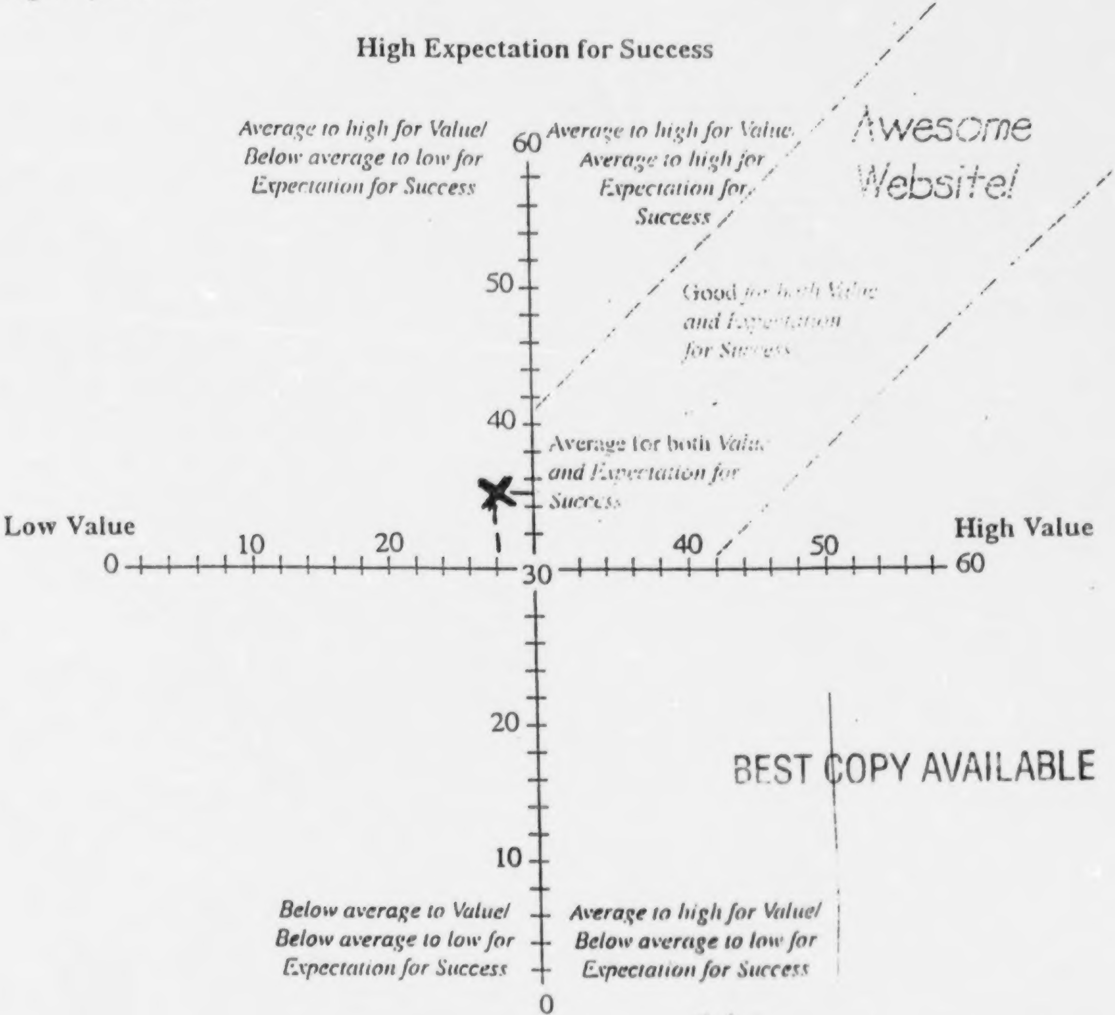
Appendix V-8, WebMAC Analysis Template, Group 1

Appendix V-8, WebMAC Analysis Template, Group 1

WebMAC Website Motivational Analysis Checklist (3.1) *Page 7*

Plotting Template

Plot the score for V along the Value continuum; plot the score for XS along the Expectation for Success continuum. Then, draw straight lines to their point of intersection. Good websites will have both scores that fall in the upper right quadrant. An **awesome** website will have scores that fall in the extreme upper right quadrant.

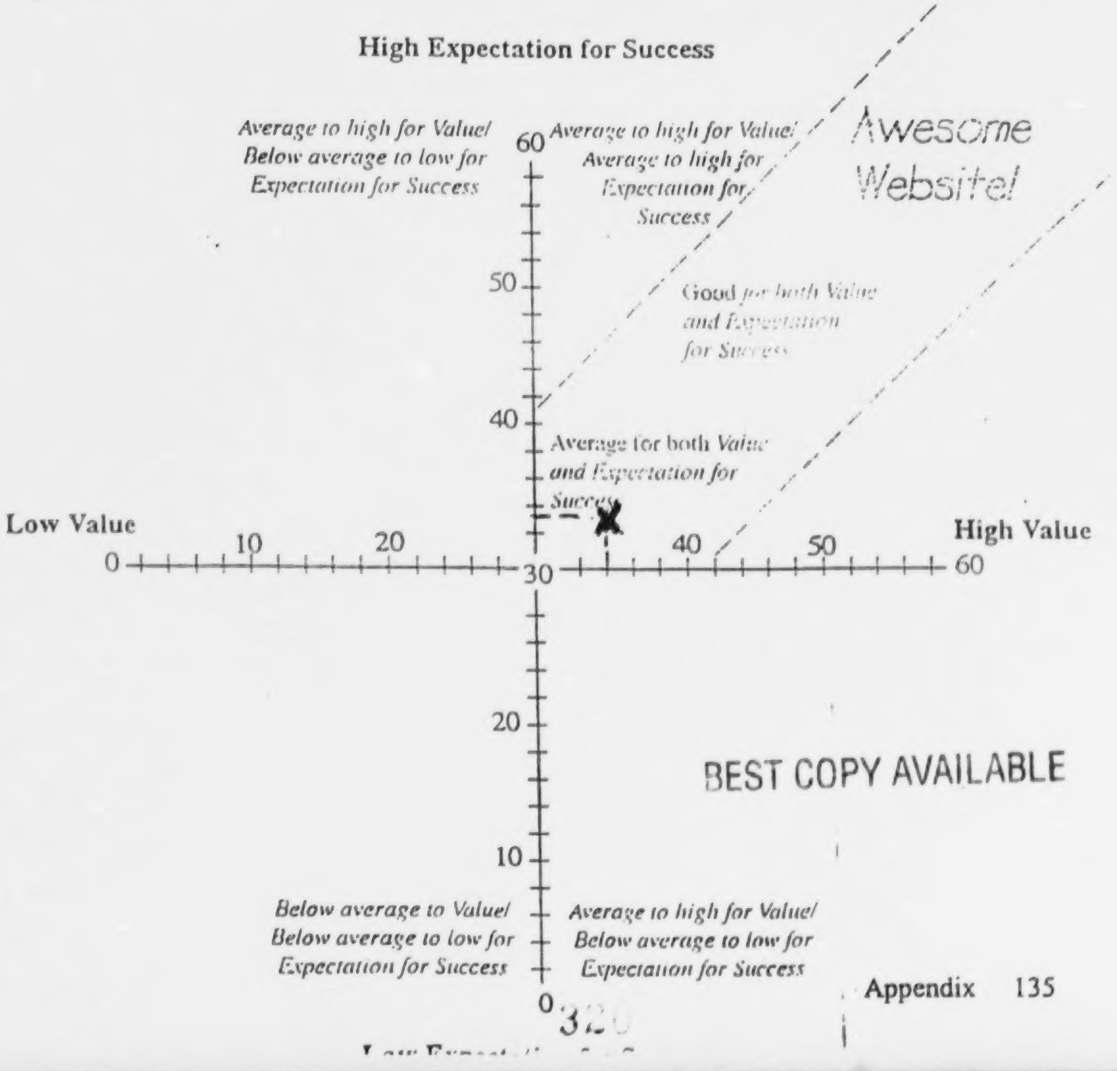


BEST COPY AVAILABLE

Appendix V-9, WebMAC Analysis Template. Group 2

Plotting Template

Plot the score for **V** along the Value continuum; plot the score for **XS** along the Expectation for Success continuum. Then, draw straight lines to their point of intersection. Good websites will have both scores that fall in the upper right quadrant. An **awesome** website will have scores that fall in the extreme upper right quadrant.



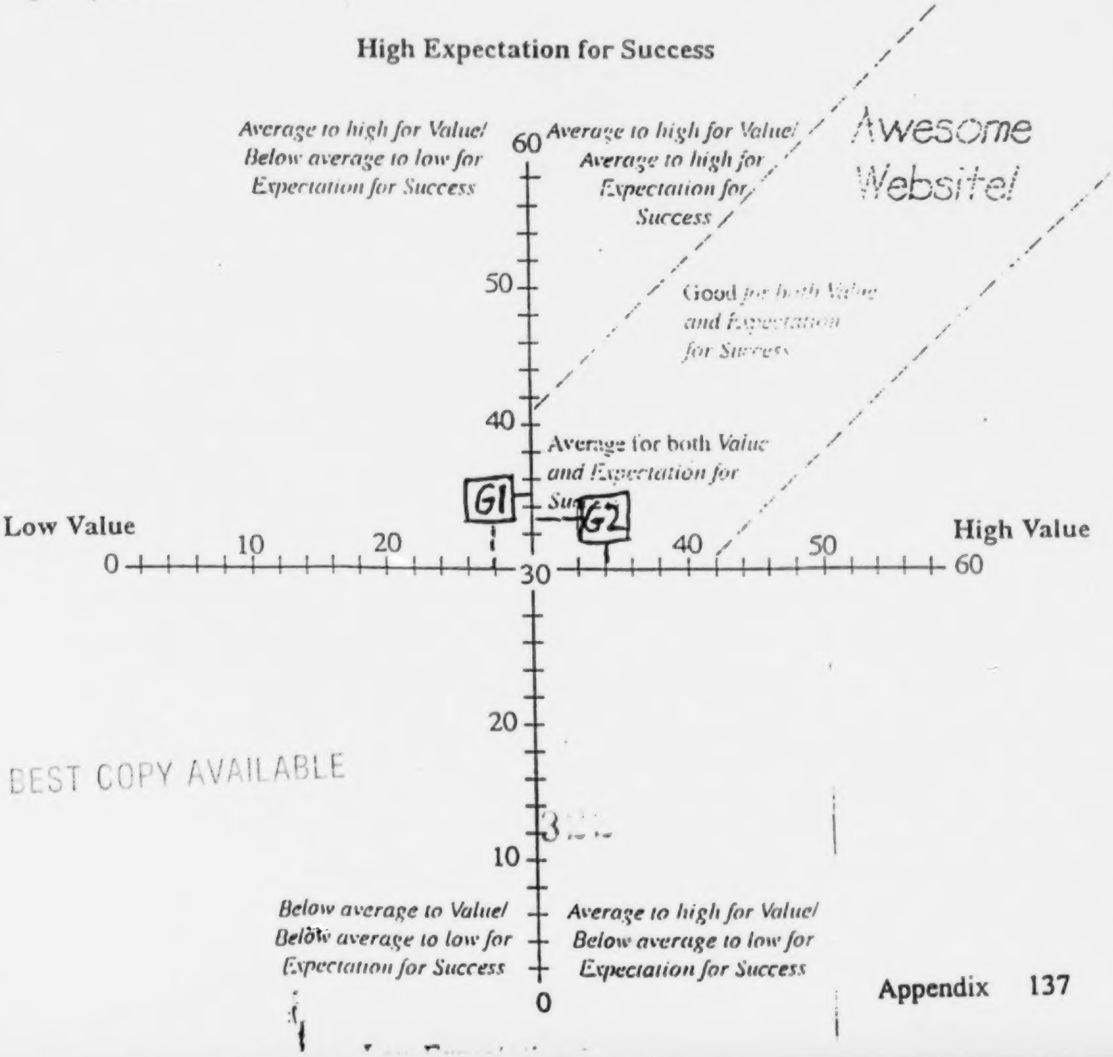
BEST COPY AVAILABLE

Appendix V-10 WebMAC Analysis Template, Group 1 and 2 Compared

Appendix V-10 WebMAC Analysis Template, Group 1 and 2 Compared

Plotting Template

Plot the score for V along the Value continuum; plot the score for **XS** along the Expectation for Success continuum. Then, draw straight lines to their point of intersection. Good websites will have both scores that fall in the upper right quadrant. An **awesome** website will have scores that fall in the extreme upper right quadrant.



BEST COPY AVAILABLE

Appendix V-11, OESE Expert Evaluation Materials

Appendix V-11, OESE Expert Evaluation Materials

U.S. DEPARTMENT OF EDUCATION WEBSITE EVALUATION PROJECT

Please evaluate each of the subsites within the OESE website on the following five criteria. These criteria are merely presented as a guideline. Feel free to include evaluative comments that do not seem to fall into one of the criteria.

Orientation	Overview, scope, mission, liability, copyright if appropriate
Design	Aesthetics, consistency, and appropriateness of content
Navigation	Minimal user skills required, clear indicators/links, easy to understand terminology, link provided to appropriate homepages (OESE, ED), obvious and easy to understand finding aids
Quality	No dead end links, outdated information, incomplete pages
Customer Service	Obvious and easy mechanisms to provide feedback, obvious and easy to understand help features

Make comments about the site on the on-line form currently open on your PC desktop.

Given the number of pages we would like you to look at, it will not be possible for you to spend more than 10 minutes on each subsite. You may only be able to make one or two comments per criteria per page. We will alert you after every 10 minutes has passed. These time alerts should only act as reminders of the passage of time and the need to evaluate all eight subsites. Feel free to move at your own pace.

Subsites:
Compensatory Education (CEP)
Comprehensive School Reform Demonstration (CSRD)
Goals 2000
Impact Aid
Office of Indian Education
Office of Migrant Education
Safe and Drug Free Schools
School Improvement
Home Page/General

Appendix V-12, OESE Expert Evaluation Materials

Appendix V-12, OESE Expert Evaluation Materials

Orientation

Design

Navigation

Quality

Customer Service

Appendix V-13, OESE Website Evaluation By Subsection of Website

Appendix V-13, OESE Website Evaluation By Subsection of Website

As explained earlier in the methods section, due to the breadth of evaluatory comments sought, each of the four evaluators did not have time to complete an evaluation of each subsection. The researchers rotated the list of assigned subsections for each evaluator however, to guarantee that at least one evaluator would look at every subsection.

The comments of the evaluators regarding each subsection follow. Some subsections contain one set of comments, others contain two or three sets of comments. The researchers have not edited these in any way.

Compensatory Education (CEP)

Two evaluators evaluated the CEP subsection. Their comments follow arranged by evaluation criteria: orientation, design, navigation, quality and customer service

Orientation

This site is much better organized in relation to the other sites I looked at. At least there is a kind of overall "theme" that follows from page to page.

Design

The hand pictures are more or less interesting and clear to follow .. good job on putting the links at the top and bottom of the page .. I'd also think about having some consistent margins on either side of the page to make it more readable , ie:

```
<TABLE BORDER=0>
<TR>
<TD WIDTH="10%"></TD>
<TD>

page data here

</TD>
<TD WIDTH="10%"></TD>
</TABLE>
```

That would provide nice clean margins.

Navigation

Fine .. again with the hands.

Quality

Good again .. everything nicely dated and no missing links I could fine .. someone NEEDS to proof and edit these pages. Spelling errors galore and grammar ones as well.

Customer Service

There's an email address and FAQs .. FAQs are always good.

Overall

Not enough orientation to where I am at within the site. Did not have much time to do this activity due to server problems. overall, looking at the three sites, there wasn't much consistency in design layout among them given that they are all from the main source.

Orientation

The mission and scope are clearly stated. There is an introductory section to every page which covers the criteria of evaluation. I think that is the most important page. The way it is currently designed is very

BEST COPY AVAILABLE

useful. I would like to be able to reach everything on the web sites from these splash pages.

Design

Appealing in terms of use of text and graphics as pointers. Font size is too small if catering to an elderly audience. The use of pictures on each into page is not useful or informational but does perhaps send out a message about the services provided in that there is an element of caring as illustrated in the use of pictures of children and graphics appealing to children.

Navigation

Very easy navigation. The text and graphic based menu is not overwhelming and is placed in obvious places that are hard to miss. Again slightly larger font for these navigation bars would help.

Quality

No apparent dead links. Information is sufficient but not overwhelming.

Customer Service

I recall on several pages a reference to contact names and email addresses and "where to get help" sections.

CSRD

One evaluator evaluated the CSRD subsection. His comments follow.

Orientation

The splash page here is misleading because it does not contain enough information and is quite redundant because if you go to the home page most of the information is there so why add this level when one could just go directly to that page. I thought that overall this criteria is well addressed.

Design

Why do we have this little icon at the upper left hand corner that takes you to the home page. It is too small, distracting and is not the only way to get to the home page. I would suggest removing it. I don't think the splash page is well designed and is certainly not consistent in style with the more formal looking web page.

Navigation

I found navigation to be easy from the home page but got more difficult and unorganized when it got to the second and third levels. A lot of work needs to be done on this level.

Quality

Given the short time available to do a thorough job, I would say that I did not find dead links, the information appeared current based on last date of modification. I did not see any incomplete pages.

Customer Service

I did not seem to find much related to customer service.

Goals 2000

Two evaluators completed an evaluation of the Goals 2000 subsection.

Orientation

The goals and missions are well stated.

Design

The splash page is a good introductory page about mission and scope but the page is not well organized in terms of what is in the site. Embedding the links in the text is not helpful because it distracts the user. The links also appear to be at the same level of importance when I do not think they are.

Navigation

Once you go into the second level, a listing of links does not help much especially when they take up the whole page and there are so many of them.

Quality

very outdated (jan 1997)

Customer Service

I did not see any.

BEST COPY AVAILABLE

Orientation

It seems to me that the Goals2000 site needs to fill two major requirements – first, to inform people what the program is and second to help potential grant applicants complete the application process. The site provides this information, although not in a way that is particularly helpful to users.

Design

The design of this part of the site is obviously supposed to be simple and straightforward – and it does not take a great deal of time to dl over slow connections. Unfortunately, the site reads more like someone simply took pre-existing text and pasted it in, adding random links where appropriate. The site needs to take advantage of web features like the ability to link within a document to pull out major points .. there should also be more help for the grant writers.

Navigation

The navigation is horrible. Since there is no "main-menu", each of the subsequent pages in the site doesn't link back to anything except the dept of ed main page, which isn't useful. There is no logical "flow" to the site at all.

Quality

There doesn't seem to be any missing links .. most, though not all, of the info is dated but some is from a while back. This is confusing to users because info from last year might still be current, but users have no way of knowing this. There needs to be expiration dates on the pages.

Customer Service

There isn't any way for users to provide feedback, etc .. this should definitely be here to provide help for grant writers.

Impact Aid

One evaluator examined the Impact Aid subsection.

Orientation

This looks like a site that was meant to list different types of grants and which office/dept they come out of. Horrible, horrible interface. At least you can search grants.

Design

This design if horrible. I understand the basic idea of having the tier or tree approach for each dept .. but no user is going to understand what those numbers are underneath them. Obviously this data is in some kind of database already, so you've got to come up with a better way of using the info returned from the db.

Navigation

The navigation is not consistent. The "back to navigator" button takes me some place I didn't start from. When you expand a "tree", the page leaps around like crazy and some users won't realize what happened. There are no instructions, either.

Quality

No problems here .. all the info is there, like I said before – it's the presentation that's flawed.

Customer Service

Nothing at all .. it's very easy to get lost on this site .. and who do you email/call if you have a question? In the individ grants themselves there is contact info, but not for the whole site.

Office of Indian Education

<evaluator copied his comments from his Impact Aid evaluation>

Orientation

This looks like a site that was meant to list different types of grants and which office/dept they come out of. Horrible, horrible interface. At least you can search grants.

BEST COPY AVAILABLE

Design

This design if horrible. I understand the basic idea of having the tier or tree approach for each dept .. but no user is going to understand what those numbers are underneath them. Obviously this data is in some kind of database already, so you've got to come up with a better way of using the info returned from the db.

Navigation

The navigation is not consistent. The "back to navigator" button takes me some place I didn't start from. When you expand a "tree", the page leaps around like crazy and some users won't realize what happened. There are no instructions, either.

Quality

No problems here .. all the info is there, like I said before – it's the presentation that's flawed.

Customer Service

Nothing at all .. it's very easy to get lost on this site .. and who do you email/call if you have a question? In the individ grants themselves there is contact info, but not for the whole site.

Office of Migrant Education

One evaluator evaluated the Office of Migrant Education

Orientation

Who is the site targeted for? Migrant workers themselves?

Design

consistent, simple, not distracting. Defnitely does not suffer from 'over design'. Could be more visually appealing, with color used throughout the pages as opposed to mastheads and text. Some inconsistency when moving around (Background Colors change for no reason?). Some pages are too long and should be separated into several pages (but also present one long version of the page that can easilly be printed see: http://www.migranted.org/ccdrep.htm)

Navigation

Some problems with navigation re: the 'up' button which brings you to the top of a section different from the one

You originally want 'down' in re:

The transition from: http://www.ed.gov/offices/OESE/MEP/grants.html (click on subgrants) -> http://www.ed.gov/offices/OESE/MEP/PrelimGuide/pt2e.html and then clicking on the up (should bring you back to the previous page, but brings you elsewhere..)

How about a search function?

Quality

information seems up to date, and this can be determined by the 'freshness dating' at the bottom of most of the pages. No dead-end links or out of date pages were found.

Customer Service

No obvious or easy mechanisms to provide general feedback. One mechanism to send in information about events, but this is woefully inadequate. Need a more formal way than an easily overlooked mailto: at the bottom of most pages.

Safe and Drug Free Schools

One evaluator completed the Safe and Drug Free School subsection evaluation

Orientation:

<no comments>

Design

Poor organization, Items on the news page that would be considered publications not referenced from the publications page. Similar comments apply to those above. (comments above: consistent, simple, not distracting. Defnitely does not suffer from 'over design'. Could be more visually appealing, with color used

BEST COPY AVAILABLE

throughout the pages as opposed to mastheads and text. Some inconsistency when moving around (Background Colors change for no reason?). Some pages are too long and should be separated into several pages (but also present one long version of the page that can easilly be printed see: http://www.migranted.org/ccdrep.htm))

Navigation

Some links bring you to other sites without hinting at the fact you'll go there (ie: the link from the homepage to the publications ordering site.)

Quality

Information seems current, dates at the bottom of the pages are good.

Customer Service

mailto: links to feedback, same comment above applies. (comments above: No obvious or easy mechanisms to provide general feedback. One mechanism to send in information about events, but this is woefully inadequate. Need a more formal way than an easily overlooked mailto: at the bottom of most pages)

School Improvement

Two evaluators examined the School Improvement subsection. Their comments follow.

Orientation:

<no comments>

Design

More visually appealing than the previous pages. Nice colors and design. Not the stale masthead/text approach. Lack of consistency as the site is explored however needs to be addressed.

Navigation

Straightforward, but there are many links to to other sites, where there's no way to get you back to the Scool Improvement page.

Quality

A bit out of date (Not as current as the previous sites) dates are mentioned though. This is good.

Customer Service

Insufficient feedback mechanisims. See comments above. (comments above: No obvious or easy mechanisms to provide general feedback. One mechanism to send in information about events, but this is woefully inadequate. Need a more formal way than an easily overlooked mailto: at the bottom of most pages)

Orientation

The splash page provides more in depth info about the programs administered than the About page; perhaps what's on the splash page should go under the main site. The page describing the programs (http://www.ed.gov/offices/OESE/SIP/programs/) is quite good.

Design

Some confusion on links to Charter & Magnet Schools. Both main page (http://www.ed.gov/offices/OESE/SIP/) & About page (http://www.ed.gov/offices/OESE/SIP/aboutsip.html) link to Charter schools site, which is probably unnecessarily redundant. About page links to Magnet Schools Assistánce Programs (http://www.ed.gov/offices/OESE/SIP/innovmgn.html), but main page links to Magnet Schools Assistance Grant Program, which in turn links to outside sites. These two Magnet schools pages should probably be merged in to one.

Navigation

Quite simple.

Did not expect to have to sign a guestbook to look at Region 1. (http://www.edc.org/NECAC/) Filling out a survey should be an option, not a requirement.

Quality

Didin't notice any dead links.

BEST COPY AVAILABLE

Customer Service

Didn't notice any feedback or help mechanisms, but the site was so small that it wasn't necessary.

Main homepage and Associated Links

Two evaluators examined the OESE homepage.

Orientation

Mission and Responsibilities are clear & easy to find. Could use a link on the About Us page to the Programs & Funding, maybe as an indicator of the Scope of OESE.

Also, good idea to have links to staff members' individual homepages, though having links to their photos is probably unnecessary.

Design

On the Current Question page (http://www.ed.gov/offices/OESE/ESEA/question.html), the responses should be posted as well as the question, to get some discussion going. Maybe have this be a threaded discussion list sort of thing.

Navigation

Simple to navigate. There are few links per page, making them easy to see. Also, good headings for blocks of text. Easy on the eye.

Quality

News page is slightly out of date – latest entry is over a week old. And why have an archive of news that's over a year old?

Link to LearnNet on Hot Topics page (http://www.ed.gov/offices/OESE/hot.html) is out of date.

Link to National Exchange Carrier Association on same page is dead.

Customer Service

Good Contact page, but the link to it maybe should go at the top of the About Us page. Also, why have a Questions & Comments page separate from the Contact info page? These 2 pages could easily be merged.

Orientation:

<no comment>

Design

Seems to follow (or establish) a template for the other sites in this section. Unfortunately, the template it establishes is dry and isn't visually stimulating.

Navigation

Attempts to be straightforward, easy to get lost.

Quality

<no comment>

Customer Service

See comments on feedback above. Need something more than a mailto: link! (No obvious or easy mechanisms to provide general feedback. One mechanism to send in information about events, but this is woefully inadequate. Need a more formal way than an easily overlooked mailto: at the bottom of most pages)

BEST COPY AVAILABLE